REFORMING THE MILITARY HEALTH CARE SYSTEM

The Congress of the United States
Congressional Budget Office

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, DC 20402

J932-7

PREFACE

Serious problems beset the military's extensive system of health care: rising budgetary costs, dissatisfaction among its beneficiaries, and inadequate readiness for war. This report, prepared at the request of the House Committee on Armed Services, looks at a range of possible reforms. One of them is the Administration's CHAMPUS Reform Initiative, which aims to contain the rapidly rising costs of the Civilian Health and Medical Program of the Uniformed Services. In keeping with the mandate of the Congressional Budget Office (CBO) to provide impartial analysis, the report makes no recommendations.

Joel Slackman of CBO's National Security Division prepared the report under the supervision of Robert F. Hale and Neil M. Singer. The author expresses his appreciation to Susan Hosek of the RAND Corporation for her comments on an earlier draft. (External reviewers bear no responsibility for the final product, which rests solely with CBO.) The author also gratefully acknowledges the help of the Defense Department's Office of Health Affairs and its Defense Medical Systems Support Center in providing a wealth of health care data. Finally, the author wishes to thank Jonathan Parker (formerly with CBO) for collecting and analyzing data on the Army's PRIMUS program. Francis S. Pierce edited the manuscript, and Kathryn Quattrone prepared it for publication.

James Blum
Acting Director

January 1988

CONTENTS

SUMMARY xi

I INTRODUCTION AND BACKGROUND 1

The Need for Cost Containment 1
The Military Health Care System 6

II ISSUES IN THE USE OF MILITARY HEALTH CARE 15

The Problem of High Use 16
Factors Contributing to High Use 20
Unintended Consequences of Reform: The Problem of "Ghost Care" 29
Effects of Potential Reforms on Readiness and Satisfaction 31

III THE CHAMPUS REFORM INITIATIVE 35

Highlights of the CHAMPUS Reform Initiative 35
How CRI May Save Money 38
Effects on Costs 41
Effects on Military Workloads 51
The Status of CRI 54

IV ALTERNATIVE STRATEGIES USING CAPITATION 55

The Capitation Strategy 56
Combining CRI with Capitation 58
Catchment Area Management 69

V BUILDING ON CURRENT PROGRAMS 77

Civilian-Run Outpatient Clinics 78
Selective Contracts for Mental Health Care 84
Realignment of Military Medical Assets 86
Greater Use of Cost Sharing 88
Conclusion 91

APPENDIXES

A The 1984 Military Beneficiary Health Care Survey 95

B Actual and Expected Admission Rates 99

C The Statistical Model of Family Use 103

D The Capitation Budgeting Demonstration Project 115

TABLES

1. Summary of Workloads in Treating Nonactive-Duty Beneficiaries in Fiscal Years 1985 and 1986 in the United States 4

2. Costs of Providing Military Medical Care Worldwide, Fiscal Year 1986 7

3. Numbers of Military Health Care Beneficiaries in the United States in 1986 and Projected for 1992 10

4. Hospital Admissions in the Military Health Care System in Fiscal Year 1985 for Nonactive Beneficiaries Living Inside and Outside Catchment Areas 12

5. Estimated Cost to the Government of a Hospital Day in 1988 21

6. Classification of Military Families by Their Outpatient Behavior and by Location 30

7. Classification of Assumptions for Analyzing the CHAMPUS Reform Initiative 43

8. Summary of Possible Added Costs or Savings Assuming Full Implementation of the CHAMPUS Reform Initiative 48

9. Summary of Possible Percent Change in Non-Active-Duty Patient Workloads in Military Treatment Facilities under CHAMPUS Reform Initiative (CRI) 53

10. Simulated Changes in Nonactive Patient Workloads under a CHAMPUS Reform Initiative (CRI) Capitation 66

11. Outpatient Care Preferences in Relation to Characteristics of Local Treatment Facilities 72

12.	Outpatient Visits in the Washington, D.C., Metropolitan Area by Nonactive Beneficiaries	82
13.	Estimated Savings from Charging Nonactive Outpatients in Military Clinics $5 a Visit, Except Survivors and Dependents of Junior Enlisted Personnel	92
A-1.	The Stratified Random Sample of Beneficiary Households from the 1984 Military Health Care Survey	96
A-2.	Weighted Sample of Households and Individual Beneficiaries from 1984 Military Health Care Survey	97
A-3.	Age-Sex Percentage Distribution of Weighted Sample Beneficiaries Compared with Actuals in 1986, by Sponsor's Status	98
B-1.	Actual and Expected Rates of Hospital Admission for Active-Duty Dependents by Catchment Area	100
C-1.	Explanatory Variables in the Polytomous Logit Maximum Likelihood Equations	105
C-2.	Active-Duty Families Living Inside Catchment Areas	106
C-3.	Active-Duty Families Living Outside Catchment Areas	107
C-4.	Retired Families Living Inside Catchment Areas	108
C-5.	Retired Families Living Outside Catchment Areas	109
C-6.	Expected Probabilities of Military and Civilian Reliance Under Selected Assumptions	110

FIGURES

1. Trends in Medical Outlays 2

BOX

1. Key Terms 13

SUMMARY

High costs, wide beneficiary dissatisfaction, and inadequate readiness for war have stirred widespread interest in changing the military's system of health care. Large sums are at stake because of the military health care system's scope. The Army, Navy, and Air Force run 129 hospitals (medical centers and regional and community hospitals), and several hundred outpatient clinics in the United States. About 9 million people are entitled to use these facilities, including not only the 2.2 million men and women serving on active duty but their roughly 3 million dependents along with about 4 million retired military personnel and their dependents and survivors. Caring for dependents and retirees--nonactive beneficiaries--in military facilities costs the Defense Department more than $3 billion a year.

When nonactive beneficiaries cannot obtain care directly from the armed forces, because a particular medical service is unavailable or because military facilities in general are hard to reach, they may use the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS). CHAMPUS pays a large part of the costs of care obtained from civilian hospitals and doctors. Dependents and retirees can use CHAMPUS whenever they want for outpatient care, but for hospital care those living in a "catchment area"--the area roughly 40 miles around a military hospital--must get specific permission from their local military medical commander. In recent years funding for CHAMPUS has tripled, from about $710 million in 1980 to more than $2 billion in 1987.

In response, the Administration has put forward the CHAMPUS Reform Initiative (CRI), which has at its core several fixed-price contracts with private health care companies to provide care for beneficiaries who are not on active duty. Though it may save money, CRI also carries a risk of triggering much higher costs. For that reason, the Congress may want to consider alternatives that will help to contain costs. One alternative would be to enroll beneficiaries in specific health care plans and fund the plans on a per capita basis. Another strategy would be to build on various smaller-scale initiatives now under way in the Defense Department.

KEY PROBLEMS OF THE MILITARY HEALTH CARE SYSTEM

Two major contributors to rising costs are nonactive beneficiaries' comparatively heavy use of military health care, and the growing use of CHAMPUS at the expense of less costly military facilities.

The Heavy Use of Military Health Care

The extent to which beneficiaries make use of health care cannot be estimated precisely. Many dependents and retirees go outside the military system because their costs are paid from other sources, such as private health insurance policies. But dependents of active-duty personnel who live inside a catchment area generally stay in the system, using military treatment facilities or CHAMPUS. On average they visit physicians about seven times a year, almost one and one-half times more often than their civilian peers. And for every thousand such dependents who live inside a catchment area, the military health care system provides 967 hospital days; hospital day rates for the general U.S. population are less than 800 per thousand, and some traditional civilian health insurance plans have hospital days of about 600 per thousand beneficiaries.

This heavy use of military facilities raises costs without necessarily promoting better health. Unnecessary use is suggested by the wide differences in per capita admission rates (including admissions in military hospitals and in civilian hospitals under CHAMPUS) among the military's catchment areas. Allowing for differences in age and sex, one-quarter of all catchment areas experience 187 or fewer admissions per thousand active-duty dependents while another one-quarter experience more than 247 admissions per thousand. Some of the high use might be reduced without harming health. Evidence to support this conclusion can be found in the civilian sector, where health maintenance organizations (HMOs) have greatly reduced hospital admissions. The HMOs receive a fixed payment per beneficiary independently of use. They average about 450 hospital days per thousand beneficiaries, apparently without sacrificing the quality of care.

Growing Reliance on CHAMPUS

Many nonactive beneficiaries have turned to the CHAMPUS program to supplement their use of military facilities. One reason is that budgetary limits have caused shortages of staff and resources in military treatment centers, compelling the services to keep some military hospital beds empty; about one available military hospital bed in three is not operational.

Heightened dependence on CHAMPUS has several unfortunate results. For one, it increases the overall cost of military health care because treatment in the civilian community is generally more expensive than in existing military facilities. It also raises beneficiary dissatisfaction because dependents and retirees pay higher out-of-pocket costs under CHAMPUS: while the services charge nothing for outpatient visits and less than $8 a day for every day spent in a military hospital (which itself encourages heavy use), CHAMPUS requires beneficiaries to pay more than 20 percent of the costs of outpatient care and as much as $170 a day for hospital care. Finally, heightened dependence on CHAMPUS may erode the military's wartime capability by taking away potential patients; the services could eventually be forced into employing fewer physicians and nurses, especially those with surgical skills critical to wartime readiness.

THE CHAMPUS REFORM INITIATIVE

The Administration's reform seeks to use fixed-price contracts to resolve these problems. Each contractor, or "carrier," will assume responsibility for all CHAMPUS care provided to nonactive beneficiaries in a large geographic region. The main tools for containing costs will be the use of preferred provider organizations and the sharing of staff.

Cost-Containing Tools

In addition to funding conventional CHAMPUS, the CRI carriers will offer a new package of enhanced primary and preventive care benefits under the CHAMPUS Prime program. This program will deliver health care through a number of preferred provider organizations (PPOs). A PPO is a group of physicians and hospitals that signs a contract to offer discounted services to some beneficiary population. PPOs are becoming increasingly common in the civilian sector as a means for containing costs: they save employers money not only by offering discounts but by carefully reviewing activities in order to reduce hospital admissions or outpatient visits. Thus CHAMPUS Prime may lessen heavy use of health care services by beneficiaries.

Enrollment in CHAMPUS Prime will be voluntary. As inducements to join, members will receive enhanced primary care benefits and pay lower out-of-pocket costs. But once signed up, they will not be able to seek care outside the network of preferred providers. They will still be eligible for care in military facilities, however. Indeed, military hospitals should be able to deliver more care because of staff-sharing arrangements, thus easing the problem of growing reliance on CHAMPUS. CRI carriers, with the agreement of local military medical commanders, will be able to hire qualified civilians to fill selective shortages in military hospitals in order to diminish reliance on CHAMPUS. That way, carriers will shift patients from CHAMPUS to military hospitals.

Crossovers and Ghosts

Even if the CRI carriers achieve substantial savings through PPOs, and shift many patients to military hospitals, CRI will only save large sums if many people join CHAMPUS Prime. One likely assumption is that CHAMPUS Prime will attract the three military families out of five who now obtain outpatient care from both military providers and civilian providers under CHAMPUS. (Information on family outpatient patterns comes from the 1984 Military Health Care Survey.) These "crossover" families are neither totally satisfied with current military facilities nor necessarily averse to giving up some freedom of choice.

Savings from Crossovers. If all crossover families join CHAMPUS Prime, CRI could save between $195 million and $590 million a year depending on how effectively the carriers wield their cost-cutting tools. (These savings are relative to a $2.8 billion baseline estimate that includes the costs of medical and surgical hospital care and nonpsychiatric outpatient care for nonactive beneficiaries in the United States.) At the same time, thanks to sharing arrangements, workloads in military hospitals would rise between 6 percent and 16 percent. Outpatient workloads could decline by more than 40 percent as CHAMPUS Prime enrollees shifted to using preferred civilian providers.

Higher Costs from Ghosts. CRI has the potential for increasing costs as well as reducing them, largely because of "ghosts"--the beneficiaries who go outside both military facilities and the CHAMPUS system for health care. For every 10 days of hospital care paid for by conventional CHAMPUS, another 13 days of hospital care for CHAMPUS-eligible beneficiaries is paid for by other sources, including private health insurance policies. Statistical analysis shows that family outpatient patterns--which largely decide where people go for inpatient care--will change in response to changes in the supply of military health care services. The greater the availability of care within the military health care system, the more likely will families be to use the system.

Thus, easier access to health care under CRI may increase the workload of the military health care system. This has happened in the past when health care benefits were improved. Moreover, beneficiaries who shift their care to the military's system may decide to give up their private insurance policies altogether, which are now held by roughly one military family in three. If these things happen, costs could swell. Annual spending on military health care could rise by at least $345 million, even if carriers apply their cost-cutting tools effectively. If their cost-containment efforts are not so successful, spending could rise by as much as $1.2 billion a year.

Other Issues

Costs are not the only concern of CRI. The reform may increase satisfaction among beneficiaries if it improves the timeliness and quality of service. And it could improve the armed forces' readiness for war by shifting more care, especially surgical care, back to military hospitals.

But CRI is experiencing early problems. Few potential carriers have bothered to compete for a CRI contract, perhaps because it would require them to bear some of the cost risk just described. When the Defense Department requested proposals for contracts, only three bidders responded by the closing date; two subsequently withdrew their proposals, thus compelling the Department to scale down its plans for CRI. The one remaining bidder was awarded a contract in January 1988. Thus CRI's future prospects are uncertain.

THE ALTERNATIVE OF CAPITATION

An alternative to CRI would be to enroll beneficiaries in specified health care plans--that is, require them to choose a particular plan and not change except during specified periods--and pay those plans fixed per capita fees that would be independent of the use of services. Such a system of "capitation" would create strong incentives for health care providers to save money by curtailing unnecessary use, as demonstrated by the success of HMOs in reducing hospital admissions. Individual medical commanders would have particularly good reason to curtail use of services because their budgets would cease to depend so heavily on patient workloads.

Two Approaches

The Defense Department could carry out a capitation strategy in two ways:

- Superimposing capitation on the CHAMPUS Reform Initiative--allowing beneficiaries to choose between a plan run by and centered around a military hospital and one run by a private carrier; and

- Managing by catchment area--allotting military medical commanders funds to provide care to all enrolled beneficiaries in their areas.

Under the first approach, each military hospital would register a fixed number of beneficiaries from within its catchment area, receiving enough funds to care for its enrolled population; the CRI carrier would also enroll a definite number of beneficiaries, and provide care under CHAMPUS or CHAMPUS Prime for a fixed payment per member. Under the second approach, military medical commanders would be exclusively in charge of all enrolled beneficiaries in their catchment areas.

Effects on Costs

Like the Administration's proposed CRI, these approaches could cost or save money depending on beneficiaries' reactions, but the likelihood that they would save money would be higher. (Catchment area management would be less far-reaching because two nonactive beneficiaries out of ten in the United States live outside the boundaries of a catchment area.) Both approaches would have the advantage over CRI of creating strong incentives for military and civilian health care providers to economize. And both would also define a population of beneficiaries for a fixed period, thus allowing reasonably accurate estimates of costs. The resulting reduction in risk might make the private sector more willing to participate in reforming the system.

Both capitation approaches would require that the Defense Department delegate considerable managerial flexibility to individual medical commanders. Commanders would have to be able to make trade-offs between CHAMPUS funds and funds from other appropriations categories, be allowed to contract on their own with PPOs or HMOs, have latitude over numbers of civilian personnel, and be provided with highly reliable and automated information sources. Without these, capitation would probably not work.

Each approach to capitation raises concerns specific to its design. Success of CRI capitation would hinge on the proper number of beneficiaries enrolling in military-run rather than carrier-run plans. Too few enrollees, and military medical staff and equipment would go to waste, with beneficiaries perhaps making even greater use of CHAMPUS; too many enrollees, and quality of care might diminish. But this may not be a problem, since today's patterns of utilization suggest that military-run plans could enroll about 5 million beneficiaries of all types, enough to keep military hospitals running near present capacities. There would most likely be a modest decline in the number of surgical patients in military hospitals, though surgical admissions might possibly rise if enrollees shifted their ghost care from private facilities.

A problem of catchment area management is that not all military medical commanders have equal resources. Those managing small hospitals (with fewer than 100 available beds), especially small hospitals located in areas with shortages of civilian health care providers, might be hard-pressed to provide comprehensive services to every beneficiary who wanted military health care. Excluding such facilities from reform would reduce the potential for added costs or savings, though not by much; small hospitals in areas with comparatively sparse civilian care take in only 5 percent of the military's nonactive beneficiaries.

A FURTHER ALTERNATIVE: BUILDING ON CURRENT INITIATIVES

Major reforms are not the only option open to the Congress. A number of smaller-scale initiatives are now under way in various places around the country:

- Selective PPO contracts for mental health benefits;
- Special sharing agreements with nondefense health care providers that permit the services to realign their medical assets; and
- Civilian-run outpatient clinics (called PRIMUS in the Army).

Expanding the first two initiatives could help to reduce use of military health care services. Expanding the third would have a potential for reducing dependence on CHAMPUS, although by easing access to care it might also increase the overall demand for outpatient services. To offset any added costs, the Defense Department might want to charge modest fees for outpatient care.

Selective Contracts

Because military hospitals offer limited mental health services, CHAMPUS spends considerable sums on mental health care: about $330 million in 1986, or roughly 20 percent of its total spending. One-sixth of these funds flow to just five geographic areas (including the Tidewater area of Virginia, San Diego, Washington, D.C., and Long Beach and Camp Pendleton, California); 40 percent of the funds go to 20 such areas.

To control mental health costs in the Tidewater area of Virginia, CHAMPUS has contracted with a preferred provider organization to supply all mental health benefits. Though it is too soon to judge this demonstration, general civilian experience suggests that the PPO could save as much as 20 percent over conventional CHAMPUS. Thus, extending mental health PPOs to the next four high-cost areas could save CHAMPUS about $10 million a year. Extending this reform to the 20 highest-cost areas could save about $20 million.

Realignment of Military Medical Assets

If the services were to close some of their smallest and oldest hospitals, or convert them to outpatient facilities, they would be able to reassign active-duty medical staff to catchment areas where the demands for care are heaviest. Large military hospitals would be able to operate more beds, and therefore could reduce their reliance on CHAMPUS.

Several current initiatives show the possibility of realigning medical assets. At Fort Drum, New York, for instance, the Army avoided having to build a small hospital to support an expanded installation by working out agreements with local civilian hospitals and physicians to provide care under CHAMPUS. Sharing resources with the Veterans Administration is another option. The Air Force was able to convert the small and aging hospital at Kirtland Air Force Base, New Mexico, into an outpatient center because it worked out an agreement to staff 40 beds in a nearby VA medical center.

Civilian-Run Outpatient Clinics

Private corporations run several outpatient clinics under contract to the services. The Army's clinics, known as PRIMUS (Primary Medical Care for the Uniformed Services), provide a wide range of free primary and preventive care services to dependents and retirees. Extending these clinics to all large catchment areas would expand the capability of the military health care system to treat patients directly. But doing so might increase the demand for care and so raise overall costs, if the experience of the first PRIMUS clinic--opened in 1986 in Fairfax, Virginia--is any guide.

Fairfax PRIMUS. In 1986 the Fairfax PRIMUS clinic handled 70,000 visits, mostly by dependents of active-duty personnel. PRIMUS users came from all four services, but primarily from officers' families, and 20 percent of their visits were for preventive services. Each visit cost the Army about $50, generally about $5 more than a comparable pediatric visit would have cost under CHAMPUS, but about $16 less than the cost under CHAMPUS of an adult's medical visit. However, few PRIMUS users had previously used CHAMPUS, the majority having formerly visited military outpatient clinics. Moreover, the total number of dependents' outpatient visits in the catchment area containing the PRIMUS clinic rose between 1985 and 1986 by 8 percent. In contrast, between 1984 and 1985 (when there was no civilian-run clinic), visits in the same catchment area declined; and between 1985 and 1986, visits in other catchment areas in the Washington metropolitan area declined.

Even if this experience were to be repeated in other areas of the country, the popularity of PRIMUS clinics might make them a useful part of any health care reform. To help cover any added costs, the Defense Department might want to implement a fourth initiative: modest outpatient charges.

Outpatient Charges

A $5 charge for all nonactive outpatients--excluding dependents of junior enlisted personnel below pay grade E-5 and survivors of deceased personnel--would raise about $85 million a year. Though the Congress has generally opposed outpatient charges as a reduction in benefits, modest fees might be acceptable as part of a larger package of health care reforms. Survey data show that three beneficiaries out of four would be willing to pay $5 a visit in return for other benefits.

Even though charges would reduce beneficiaries' use of outpatient services, civilian experience suggests that health would not suffer. People generally seek needed care even when they must share a modest part of the costs. But to make sure that some families with unusually high needs would be able to afford care, the Defense Department could place limits on out-of-pocket costs. A $100 a year limit per family would reduce the above revenue estimate only modestly.

CHAPTER I

INTRODUCTION AND BACKGROUND

The Defense Department funds a multi-billion-dollar health care system, one of the nation's largest. Over 500 military treatment facilities (MTFs), including 129 hospitals and about 350 clinics located in the United States, provide care directly to the 2.2 million men and women on active duty and to about 7 million "nonactive" beneficiaries, including dependents of active-duty personnel, retired military personnel, and their dependents and survivors. Indeed, nonactive beneficiaries make up the vast majority of the military's inpatients and outpatients. When so-called "direct care" is not available, they may use the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), a separate insurance plan that helps pay for private medical care.

THE NEED FOR COST CONTAINMENT

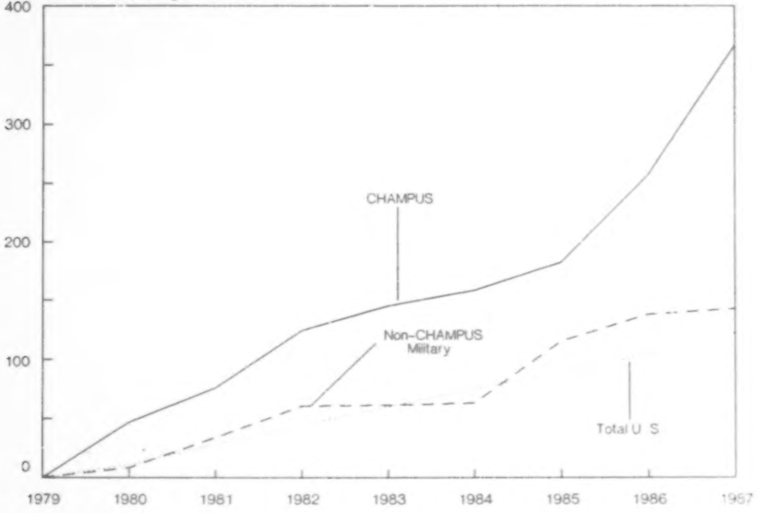
Rapidly escalating costs have earned CHAMPUS a troubled reputation. While the cost of all non-CHAMPUS military activities has risen by roughly 145 percent since 1979--at a somewhat faster pace than total U.S spending for health--the cost of CHAMPUS has risen by 365 percent. In dollar terms, outlays for all military medical activities rose from $4.1 billion in 1979 to $11.1 billion in 1987, while CHAMPUS expenditures went from $485 million in 1979 to $2.3 billion in 1987.1/ These trends are shown in Figure 1. The rapid growth in CHAMPUS costs has led to major shortfalls in budgeted funds: in 1982, $105 million was shifted from other Defense Department programs, while in 1986 CHAMPUS received $360 million in supplemental funds. And just last year CHAMPUS received $425 million in

---

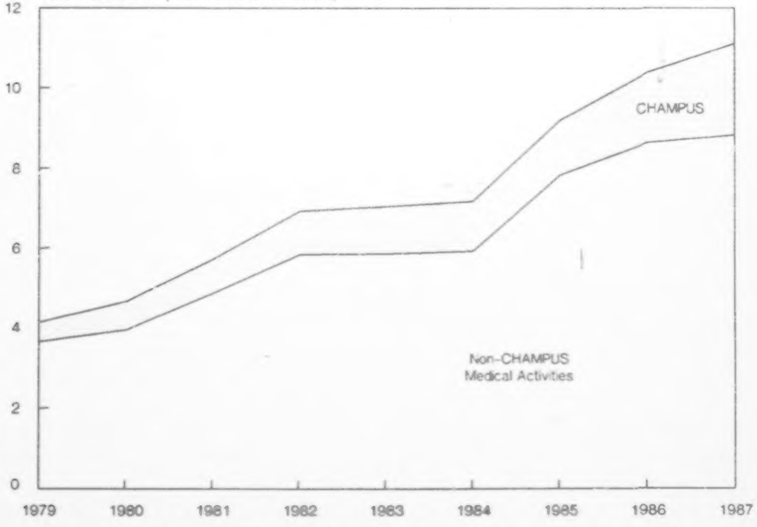
1. Over the last several years, the CHAMPUS benefits package has been enhanced in some areas (for example, to cover new services such as eye examinations) and tightened in others (such as the imposition of a 60-day limit on inpatient mental health care).

Figure 1.
Trends in Medical Outlays

Percent Change in U.S. Military and Total Health Care Spending Since 1979



Spending on Military Medical Activities in Fiscal Years 1970–1987 (In billions of current dollars)



SOURCE: Congressional Budget Office based on data from the Department of Defense and the Health Care Financing Administration.

supplemental funds to cover unanticipated obligations, though it still fell short of its needs by $115 million.[2]

Broader Problems

Escalating CHAMPUS costs are a product of growing numbers of military retirees and dependents, and high medical inflation--in 1986 medical prices rose four times faster than the Consumer Price Index. But a central reason CHAMPUS costs have risen is that in 1986 the services cut back the availability of care in the United States to nonactive beneficiaries. Despite the increasing numbers of dependents and retirees, military hospitals admitted 7 percent fewer of them in 1986 than in the year before, and military clinics received about 4 percent fewer outpatient visits from them (see Table 1). The inevitable shift of beneficiaries to civilian care paid for in part by CHAMPUS raised costs not just for CHAMPUS but for the system as a whole, because it is generally cheaper to treat patients in existing military facilities.

CHAMPUS's difficulties are thus symptomatic of broader problems in the military health care system. In particular, military medical managers and health care providers lack incentive, and perhaps resources as well, to supply quality care efficiently to nonactive beneficiaries. And beneficiaries themselves have little incentive to use medical services economically. Providers and patients therefore both behave in ways that create a central problem: heavy use of military medical care services.

The CHAMPUS Reform Initiative

Significant opportunities for savings therefore appear to lie in redirecting, if not curtailing, the use of health care services by nonactive beneficiaries. A precedent has already been set by civilian institutions such as health maintenance organizations (HMOs) and preferred provider organizations (PPOs) that limit health care costs for private-sector employers, largely through reduced hospital admissions. Better control over nonactive beneficiaries' use of health care services might also help in attaining two other key objectives of the military health care system: enhanced satisfaction among users and improved readiness to meet the demands of war.

---

[2] CHAMPUS stopped processing claims in early September and carried forward the $115 million shortfall to the next fiscal year that began in October.

The Administration has proposed an innovative strategy for altering the use of health care, the CHAMPUS Reform Initiative (CRI). It received authority under the Defense Authorization Act of

TABLE 1. SUMMARY OF WORKLOADS IN TREATING NONACTIVE-DUTY BENEFICIARIES IN FISCAL YEARS 1985 AND 1986 IN THE UNITED STATES

Type of Care	Number (In thousands)		Percent Change 1985 to 1986
	1985	1986	
Direct			
Hospital Admissions			
Army Facilities	244.8	242.3	-1.0
Navy Facilities	142.6	110.8	-22.3
Air Force Facilities	206.6	198.0	-4.2
Total	594.0	551.1	-7.2
Outpatient Visits a/			
Army Facilities	10,295	10,245 b/	-0.5
Navy Facilities	6,758	5,665	-16.2
Air Force Facilities	9,415	9,455	+0.4
Total	26,468	25,365	-4.1
CHAMPUS			
Hospital Admissions	288.4	315.0 c/	9.2
Outpatient Visits	4,926	5,876 c/	19.3

SOURCE: Congressional Budget Office tabulation based on Department of Defense, *Selected Medical Care Statistics*, and other data provided by the Defense Medical Systems Support Center.

a. Includes office visits and ancillary visits.

b. Does not include about 70,000 visits to a civilian-run outpatient clinic (PRIMUS).

c. Based on data that are about 88 percent complete for the full fiscal year.

1987 to begin demonstrating its proposal. CRI's goals are to improve coordination between the military and civilian parts of the military health care system, enhance services for beneficiaries, and contain CHAMPUS costs. At the heart of CRI lie several fixed-price contracts for providing civilian health care services, each to be competitively awarded to a private health care firm (or consortium of companies). The Defense Department hopes that CRI will stem further growth in military health care costs and perhaps even reduce them.

In the spring of 1987, the Defense Department issued requests for proposals (RFPs) for Phase I of CRI that included three regional contracts, each covering two states, and one narrower contract covering New Orleans. The response was meager. No proposals were received for the region comprising North and South Carolina. Only three organizations sent in proposals for the two regions comprising California and Hawaii, and Florida and Georgia. Two of these have since withdrawn, leaving only one bidder for one regional contract. (Two firms also bid on the small contract for New Orleans.)

CRI's long-term prospects are uncertain. Because the need to contain costs is immediate, this study analyses CRI and also looks at several alternative strategies that the Congress may wish to consider. Included are approaches based on enrolling beneficiaries in specified health care plans--so that each would receive health care from one specific source--and an approach that builds on initiatives already under way in the three services.

In the process, the study seeks to describe the military health care system: its unique structure of direct care in military facilities, or in civilian-run clinics under contract to the services, together with the civilian care paid for in part by CHAMPUS. The study also examines the diverse population of nonactive beneficiaries, and their complex pattern of health care use. It focuses on care in the United States, because that is where most military hospitals (roughly eight in ten) and most nonactive beneficiaries (about 85 percent) are located.

The rest of this chapter provides added background on the military health care system, its structure and costs, and its beneficiaries. Chapter II highlights the high rates of use, and looks into the issues involved in curbing that use. The final three chapters analyze specific options for change: Chapter III discusses the Administration's CHAMPUS Reform Initiative, Chapter IV discusses strategies that feature some form of beneficiary enrollment and capitation payment, and Chapter V looks at ways to build on current, smaller initiatives in lieu of far-reaching reforms.

THE MILITARY HEALTH CARE SYSTEM

The Defense Department provides direct care through three highly autonomous systems, headed by the Surgeons General of the Army, Navy, and Air Force. Each service manages its hospitals and clinics in its own way; no central administrative entity commands overall authority. In the Army, a central Health Services Command has direct authority over all health care facilities. The Navy's hospitals and clinics are under the control of regional divisions of a central Naval Medical Command. In the Air Force, base commanders have direct authority over the treatment facilities on their installations.

The three services spent about $5 billion in 1986 to staff and operate and maintain their hospitals and clinics worldwide. Of that, perhaps $3.1 billion went to providing care for dependents and retirees. Other functions, including education, training, and various readiness-related functions, raised the cost of all direct medical activities to roughly $8.7 billion. Detailed costs appear in Table 2.

The Central Role of Hospitals

Hospitals play a central role in providing direct care to nonactive beneficiaries as well as to active service members. In the United States, there are 129 hospitals--37 operated by the Army, 25 by the Navy, and 67 by the Air Force. They range in size from modest community facilities offering limited services to major medical teaching centers, like Walter Reed and Wilford Hall. Their actual capacity is set by the number of beds that are operational (beds currently set up, staffed, and ready in all respects for the care of patients). In 1985, 63

TABLE 2. COSTS OF PROVIDING MILITARY MEDICAL CARE WORLDWIDE, FISCAL YEAR 1986 (In millions of dollars)

Population	Source of Care	Inpatient	Outpatient	Total
Active Duty	Military Treatment Facilities	860	1,055	1,915 a/
Nonactive Duty	Military Treatment Facilities	1,395	1,715	3,110 a/
Nonactive Duty	CHAMPUS	1,275	430	1,705 b/
Total		3,530	3,200	6,730

SOURCE: Congressional Budget Office estimates.

NOTE: Costs do not include expenses relating to wartime readiness and training, recruitment, procurement, various base operations, and the Uniformed Services University of Health Sciences. Total cost for all medical activities in 1986 excluding CHAMPUS was $8.7 billion; the Administration's estimate for 1987 is $9.2 billion.

a. The defense budget does not break down the cost of directly providing care. These are estimates, based on the Defense Department's medical reimbursement rates ($441 per hospital day, $58 per outpatient visit).

b. Estimated CHAMPUS costs for 1987 are about $2.3 billion.

hospitals operated 50 beds or fewer, 20 operated between 51 and 99, 31 operated between 100 and 300, and 15 hospitals operated more than 300 beds.3/

Not only do the military's hospitals admit more than half a million nonactive patients annually--roughly twice the number admitted under CHAMPUS--but they also provide most of the outpatient care for nonactive beneficiaries using the system. In 1985, 4.35 million outpatient visits by nonactive beneficiaries passed through the system's 350 free-standing clinics; in contrast, 21.4 million such visits

---

3. Two-thirds of the smallest facilities belong to the Air Force, a result of that service's numerous and comparatively small military bases. While the average Army catchment area--the region roughly 40 miles around a military hospital--is home to about 55,000 active and nonactive beneficiaries, and the average Navy catchment to about 77,000, the average Air Force catchment area has only about 31,000 active and nonactive beneficiaries living within it. Therefore, the number of operating beds that defines the median hospital is considerably smaller in the Air Force (35 beds, meaning that half of the Air Force's hospitals operate 35 or fewer beds) than in either the Army (130 beds) or the Navy (106 beds).

passed through the military's hospitals, or 83 percent of all direct care outpatient visits.[4] Indeed, tremendous outpatient volume is a hallmark of the military hospital. About 10 percent of the average civilian hospital's workload may be attributable to outpatient care, while up to half of the average military hospital's workload results from outpatient care. Heavy workloads put great pressure on military facilities, many of which were not designed to deliver large quantities of outpatient care.[5]

The Role of CHAMPUS

The Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), which supplements care provided directly in military facilities (direct care), has antecedents that go back more than 30 years. Before 1956, military beneficiaries who could not get direct care were on their own. The Congress remedied this in 1956 by approving a plan called "military Medicare," which paid for some hospitalization and minor surgery and for maternity care. In 1966, the Congress expanded military Medicare to cover outpatient care, psychiatric care, and prescription drugs, just the sort of comprehensive coverage offered by leading private health insurance plans of the day. To avoid confusion with Social Security's Medicare, military Medicare was renamed CHAMPUS in 1968.

Now costing over $2 billion a year, CHAMPUS funds roughly 300,000 hospital admissions, 6 million outpatient visits, and several million ancillary procedures (such as lab tests and X-rays). In practice, CHAMPUS is chiefly an insurance program for hospital care, since about three-quarters of its payments go to civilian hospitals or to other

---

4. Air Force hospitals shoulder a relatively heavy load--they handle 92 percent of that service's 9.3 million outpatient visits--and Navy hospitals a relatively light load--they handle only 66 percent of the Navy's 6.7 million outpatient visits. Army hospitals lie in the middle, handling 87 percent of that service's 9.8 million visits.

5. High outpatient volumes have led inevitably to concern over the quality of care. But the implications are not clear-cut. On the one hand, physicians who are very busy may begin to provide less complete care when the number of patients seen each hour becomes too large. Moreover, hospitals designed for an earlier time often lack proper examination rooms for providers. On the other hand, physicians working in organized settings generally may provide better care than that provided by solo practitioners. For example, analysts have observed that the quality of ambulatory care for children is better in hospital outpatient departments than in office practice. See Avedis Donabedian, "The Epidemiology of Quality," *Inquiry*, vol. xxii (Fall 1985).

inpatient professionals. Until this year, CHAMPUS almost always paid hospitals' billed charges in full, an increasingly archaic practice for a major health care payer. But thanks to legislation enacted by the Congress in 1985 that linked CHAMPUS to Medicare--thus obliging hospitals that accept Medicare payments also to accept CHAMPUS payments--CHAMPUS has used the diagnosis-related group (DRG) method to develop prospective payment rates for nonpsychiatric hospital care, just as Medicare has been doing for the last four years. Under this system, CHAMPUS will pay hospitals a fixed fee per patient, the specific amount depending on the patient's diagnostic classification. The Defense Department expects that using DRGs will reduce government costs by $150 million in 1988 and by $300 million in 1989; the latter equals a sizable share of CHAMPUS's budget, but less than 3 percent of the cost of all military medical activities.

Beneficiaries in the United States

In the United States, about 8 million people are entitled to daily use of the military health care system. Active-duty personnel are in the minority, making up only 23 percent of the total beneficiary population. Their dependents make up another 27.5 percent, and military retirees and their dependents are the remaining 49.5 percent. Because of the predominance of nonactive beneficiaries, the population of the military health care system rather closely resembles the general civilian population in age and sex. (These characteristics mean that evaluations of insurance risk will be almost the same for military beneficiaries as for the general population.) As Table 3 shows, though the military population has a higher percentage of males overall--because it contains so many young active-duty servicemen and middle-aged retirees--it is similar to the general population in the percentage of children, and even in the percentage of elderly people.

Modest changes will occur in the demographics of the military population over the next few years. Projections based on Defense Department data show that between 1986 and 1992 the total beneficiary population will expand by 5 percent. Retirees and their dependents constitute the fastest growing component, becoming a majority

TABLE 3. NUMBERS OF MILITARY HEALTH CARE BENEFICIARIES IN THE UNITED STATES IN 1986 AND PROJECTED FOR 1992

	Numbers (In thousands)			Percent of Total				Percent in U.S.
Sex and Age	Active-duty Personnel	Active Dependents	Retirees and Dependents	Active-duty Personnel	Active Dependents	Retirees and Dependents	All	Total Population [a]
				1986				
Males								
0-15	0	583	203	0.0	7.4	2.6	10.0	11.8
16-24	778	77	226	9.9	1.0	2.9	13.8	7.5
25-44	803	21	195	10.2	0.3	2.5	13.0	15.7
45-64	36	2	941	0.5	0.0	12.0	12.5	8.9
65 and over	0	1	386	0.0	0.0	4.9	4.9	4.9
All	1,617	685	1,952	20.6	8.7	24.9	54.2	48.7
Females								
0-15	0	565	199	0.0	7.2	2.5	9.7	11.3
16-24	94	321	231	1.2	4.1	2.9	8.2	7.2
25-44	86	557	288	1.1	7.1	3.7	11.9	15.8
45-64	1	36	900	0.0	0.5	11.5	12.0	9.7
65 and over	0	4	311	0.0	0.1	4.0	4.1	7.3
All	182	1,484	1,928	2.3	18.9	24.6	45.8	51.3
				1992				
Males								
0-15	0	592	219	0.0	7.2	2.7	9.9	11.9
16-24	790	78	244	9.6	1.0	3.0	13.5	6.3
25-44	815	22	211	9.9	0.3	2.6	12.8	16.2
45-64	36	2	1,019	0.4	0.0	12.4	12.8	9.1
65 and over	0	1	413	0.0	0.0	5.0	5.0	5.1
All	1,641	695	2,106	19.9	8.4	25.6	53.9	48.7
Females								
0-15	0	574	214	0.0	7.0	2.6	9.6	11.4
16-24	96	326	259	1.2	4.0	3.2	8.4	6.1
25-44	88	565	313	1.1	6.9	3.8	11.8	16.2
45-64	1	37	977	0.0	0.4	11.9	12.3	9.9
65 and over	0	4	338	0.0	0.0	4.1	4.1	7.8
All	185	1,506	2,101	2.3	18.3	25.5	46.1	51.3

SOURCE: Congressional Budget Office calculations based on data from the Defense Department's Resource Analysis and Planning System.

[a] Based on middle series projections by the Bureau of the Census in *Projections of the Population of the United States, by Age, Sex, and Race: 1982 to 2080* (U.S. Department of Commerce, May 1984).

of the projected population (51 percent) in 1992.[6] The overall military population will therefore age slightly, with the proportion of beneficiaries 45 years old and older rising from 33.5 percent to 34.2 percent.

---

[6] These projections assume the modest growth in enlisted end strengths contained in the Administration's budget for fiscal year 1988.

All beneficiaries are entitled to use military treatment facilities, when care is available. First priority goes to active-duty personnel and members of the selected reserve when on active duty, second to dependents of active-duty personnel, third to members of the Reserve Officers' Training Corps (ROTC), and fourth to military retirees and their dependents and survivors. When direct care is not available, nonactive beneficiaries who are under 65 years of age may under certain conditions use CHAMPUS. (When beneficiaries become eligible for Medicare at age 65 they lose their entitlement to CHAMPUS.)

The Influence of Location

Location is an important factor in determining the use of military health care. The Defense Department defines the region roughly 40 miles around each military hospital as a "catchment area."7/ About 77 percent of nonactive beneficiaries live in these catchment areas: nine out of ten active-duty dependents and seven out of ten military retirees and their dependents. When they want to use CHAMPUS for hospital care, those living in a catchment area must get a statement from their local military medical commander indicating nonavailability of care in the military hospital ("nonavailability statement"). Exceptions are made for beneficiaries who are adequately covered by private health insurance, because by law CHAMPUS acts as a second payer, only reimbursing beneficiaries for amounts not covered by their private policies. No rules govern the use of outpatient care; beneficiaries may receive direct care or use CHAMPUS at their own discretion. Outside catchment areas, beneficiaries may use CHAMPUS freely for both hospital care and outpatient care.

The data in Table 4 show how the geographic distribution of nonactive beneficiaries effectively brings about two distinct systems of health care. People living inside catchment areas get most of their

---

7. The 40-mile limit was first set in 1975 by the Military Health Care Study Project Team. It found that 20 minutes is often the limit patients are willing to travel for routine outpatient visits, and roughly translated that period into miles. Then they doubled it to derive the 40-mile inpatient boundary. Department of Defense and others, *Report of the Military Health Care Study, Supplement: Detailed Findings* (1975), p. 947.

military inpatient care directly: CHAMPUS helps pay for only one hospital admission for every three and one-half patients admitted to military hospitals. The one exception is psychiatric care, where CHAMPUS covers roughly two and one-half inpatients for every one

TABLE 4. HOSPITAL ADMISSIONS IN THE MILITARY HEALTH CARE SYSTEM IN FISCAL YEAR 1985 FOR NONACTIVE BENEFICIARIES LIVING INSIDE AND OUTSIDE CATCHMENT AREAS (By type of care, in thousands)

Beneficiaries	Pediatric a/	Psychiatric	Ob/Gyn b/	Surgical	Medical	Total
			Inside Catchment Areas			
Active Dependents						
Direct care	161.3	2.9	212.0	42.0	72.3	329.1
CHAMPUS	30.8	10.6	34.3	11.4	17.5	73.8
Percent direct care	84.0	21.6	86.1	78.6	80.5	81.7
Retirees and Dependents						
Direct care	22.0	5.5	22.6	70.4	120.7	219.1
CHAMPUS	9.7	10.0	4.8	27.1	37.6	79.4
Percent direct care	69.4	35.3	82.5	72.2	76.3	73.4
All Beneficiaries						
Direct care	183.4	8.4	234.6	112.3	193.0	548.3
CHAMPUS	40.5	20.6	39.1	38.5	55.1	153.2
Percent direct care	81.9	28.9	85.7	74.5	77.8	78.2
			Outside Catchment Areas			
Active Dependents						
Direct care	3.5	0.1	3.7	1.6	2.1	7.6
CHAMPUS	21.1	2.4	27.1	7.5	14.6	51.5
Percent direct care	14.3	5.5	12.1	17.6	12.7	12.8
Retirees and Dependents						
Direct care	1.8	0.7	2.1	9.1	14.6	26.5
CHAMPUS	9.8	5.7	7.0	27.9	43.1	83.7
Percent direct care	15.2	11.1	23.1	24.6	25.3	24.1
All Beneficiaries						
Direct care	5.3	0.9	5.8	10.7	16.7	34.1
CHAMPUS	30.9	8.1	34.0	35.4	57.7	135.2
Percent direct care	14.6	9.6	14.6	23.2	22.5	20.1

SOURCE: Congressional Budget Office, based on data from the Defense Medical Systems Support Center.

a. Pediatric care is also counted in the other clinical categories.

b. Obstetrical and gynecological care.

admitted directly. Among beneficiaries living outside catchment areas, CHAMPUS predominates. CHAMPUS helps pay for four hospital admissions for every patient admitted to a military hospital. People living outside catchment areas, though making up about one-quarter of the nonactive population, thus account for less than 6 percent of the military's direct admissions, but nearly half of all CHAMPUS admissions.

The box below summarizes several of the key terms used in describing military health care, which recur throughout the paper.

Key Terms

Types of Care

Direct Care
Care provided in military hospitals and clinics, or in civilian-run clinics under contract to the services.

CHAMPUS
Civilian care paid for in part by the Civilian Health and Medical Program of the Uniformed Services.

Categories of Beneficiaries

Active-Duty
Military personnel serving in the Army, Navy, Marine Corps, or Air Force.

Retirees
Military personnel retired after spending at least 20 years in service, or under the disability provisions of the defense department's retirement system.

Dependents
Dependents of active-duty and retired military personnel.

Survivors
Dependents of deceased active-duty or retired military personnel.

Direct Care

Military Treatment Facilities
Hospitals and outpatient clinics run by the Army, Navy, and Air Force.

Catchment Area
The area roughly 40 miles around a military hospital.

Nonavailability Statement
Indication of need for catchment area resident to use CHAMPUS.

CHAPTER II

ISSUES IN THE USE OF MILITARY HEALTH CARE

Rising costs in the military health care system are driven by two interrelated factors: high use of medical services and heavy reliance on CHAMPUS. On a per capita basis, nonactive beneficiaries visit physicians more extensively and enter hospitals more often than other civilians. And when they receive inpatient services, chances are one in three they will receive them in a civilian hospital under the CHAMPUS program, even though lower-cost military hospitals often have enough spare capacity (available bed-space) to admit more patients.

Why do these patterns persist? Current budgeting procedures give military health care providers neither the incentives nor the wherewithal to deliver care economically. Thus, the Defense Department does not make optimum use of its existing military facilities. Nor do beneficiaries have strong motivation to use health care services prudently, because their out-of-pocket costs are generally low. These factors may have to be changed if the rise of health care costs is to be slowed.

Any reform, however, may have unintended effects on the overall use of military health care services. In particular, by making more care available in existing military facilities--either through better management or through added resources--the services might spur brand-new demands for health care that could raise overall costs. In making reforms it will also be necessary to consider the effects on wartime readiness--a fundamental goal of the military services--and on beneficiaries' satisfaction, a factor affecting the willingness of military personnel to stay in service.

THE PROBLEM OF HIGH USE

While military personnel and their dependents clearly make high use of health services, comprehensive data on their use of health care is lacking. As will be discussed below, beneficiaries obtain a great deal of care outside the military system. Such out-of-system use makes it difficult to compare military and civilian health care loads. One basis of comparison is provided by data from the 1984 Military Health Care Beneficiary Survey, showing that active-duty dependents who live inside catchment areas--the area roughly 40 miles around a military hospital--get most of their care in military treatment facilities or through CHAMPUS.[1] The following analysis is confined to per capita use of military health care in 1985 by active-duty dependents who live in catchment areas.[2]

Per Capita Use by Active-Duty Dependents

Outpatient Care. Active-duty dependents make heavy use of outpatient services. While the average rate of outpatient visits in the civilian population is about five a year, active-duty dependents average seven outpatient visits a year--a difference of 40 percent. Six of those visits are to military clinics, and one under CHAMPUS.[3] Such high per capita use is one cause of the tremendous outpatient workloads in military facilities, which make it difficult for beneficiaries to obtain care in a timely manner: the typical nonactive outpatient reports waiting about 10 days to get an appointment with a military physi-

---

1. The 1984 survey provides the most recent, comprehensive data on the use of health care by military beneficiaries. See Appendix A for details.

2. Complete and accurate data on use of military treatment facilities in 1986 are not yet available because of technical problems. Estimates of population by catchment area are based on Defense Department counts of active-duty dependents in 1986 (not 1985 because of flaws in those data), sorted by the zip codes of their sponsors' work addresses, except for dependents of sponsors serving aboard ships who are assigned to the catchment areas of their home ports. Since the Department does not know exactly where each active-duty dependent actually lives, estimated populations for a given catchment area may be inexact.

3. The civilian rate is calculated using per capita visit rates derived for the Defense Department from the National Ambulatory Medical Care Survey, weighted by the age-sex distribution of the active-duty dependent population. See *MHSS Health Care Utilization Patterns*, VRI-DMR-1 (Ann Arbor, Mich.: Vector Research, February 14, 1985). Data on direct care outpatient visits are based on the services' biometrics data systems, which keep track only of facilities' totals, not of beneficiaries' residences. Therefore, the per capita rate of six visits to military clinics applies to all active-duty dependents, not just to those living inside catchment areas.

cian, twice as long as the wait reported by nonactive outpatients in civilian facilities. In a sense, then, high per capita use feeds dissatisfaction among beneficiaries. When families that have received both military and civilian care were asked about their attitudes in 1984, fewer than two out of ten were very satisfied with the ease of getting a military appointment; four out of ten were very satisfied with the ease of making civilian appointments.

Inpatient Care. Active-duty dependents also make extensive use of inpatient services. For every thousand dependents living inside a military catchment area, the Defense Department pays for 967 hospital days a year: 609 or 63 percent of those days take place in military hospitals, the rest in civilian hospitals under CHAMPUS. By comparison, hospital day rates for the general population younger than 65 years of age (in nonfederal, short-stay, general hospitals) was 768 per thousand in 1983.[4] The probable reason for extensive military use is a high rate of admission, as opposed to greater than average lengths of stays in military hospitals. The General Accounting Office found that civilian patients treated in military hospitals in the United States during 1983 had the same average lengths of stay as comparable patients in civilian hospitals across 48 different diagnoses.[5]

Regional Variation: Leeway for Reductions?

Variation in per capita use of inpatient services around the country suggests there may be wide leeway for reducing military hospital admissions. After catchment area populations are adjusted for age-sex disparities, 25 percent of the catchment areas had more than 247 hospital admissions per thousand active-duty dependents (the 75th percentile among the 129 catchment areas analyzed), and 25 percent had 187 or fewer admissions per thousand (the 25th percentile).6/ The median catchment area had 219 admissions, with the range extending from 81 admissions to more than 385 admissions per thousand dependents.

---

[4] Adjusted for the age distribution of active-duty dependents, the hospital rate for the general population becomes 521 days. See Peter Mott, "Hospital Utilization by Health Maintenance Organizations," *Medical Care*, vol. 24, no. 5 (May 1986). One other source cites a rate of 600 hospital days per thousand for traditional insurance plans. See *Medical Economics*, vol. 62 (August 5, 1985).

[5] It sampled diagnoses representing about 28 percent of the military's civilian patients. See General Accounting Office, *Lengths of Stay in Defense Hospitals Compared to Civilian Hospitals* (March 1986).

Had all catchment areas placed at the 25th percentile in 1985, so that the admission rate never exceeded 187 per thousand dependents, there would have been 57,000 fewer hospital admissions in the military health care system. That translates roughly into 270,000 fewer direct and CHAMPUS hospital days, out of a total of 1.9 million days. The 25th percentile is chosen simply to illustrate the wide range; the issues of why differences exist among catchment areas and where patients are better off lie outside this study's scope.

Military health care is not alone in showing regional variation in admission rates. Variations in per capita use of medical procedures are a ubiquitous phenomenon in the civilian sector, not satisfactorily explained by population characteristics.7/ As in the military, the main determinant is variation in the hospital admission rate, not in the average length of stay. Admissions tend to vary most for procedures or treatments about which there is considerable professional debate concerning their necessity (examples include hysterectomies,

---

6. The weighted sum of the catchment area population of active-duty dependents according to age-sex distribution, N(j) is:

$$\text{Sum}\{W(k)*P(k,j)\},$$
$$W(k)=[D(k)/P(k)]/[D/P]$$

where

P(k,j) is the raw sum of dependents in the kth age-sex group in catchment area j in fiscal year 1986 (population counts for 1985 are not reliable);

D(k) is the total number of hospital days (direct care plus CHAMPUS) generated by the kth age-sex group in fiscal year 1985;

P(k) is the number of dependents in the kth age-sex group;

D is the total number of dependent hospital days; and

P is the total number of active-duty dependents in the United States.

From Kyung Bay and Lawrence Nestman, "A Hospital Service Population Model and its Application," *International Journal of Health Services*, vol. 10, no. 4 (1980).

7. "Understanding Variations in the Use of Services: Are there Clinical Explanations?" *Health Affairs*, vol. 3, no. 2 (Summer 1984), p. 139.

tonsillectomies, and nonsurgical treatment of pediatric illnesses).[8] At least one study--having estimated from a sample of Medicare and Medicaid patients that almost one in five hospital admissions was inappropriate--suggests that variation in total hospital use corresponds to variation in inappropriate use.[9]

The Effect of CHAMPUS Reliance in Heightening Per Capita Use

Heavier use of the CHAMPUS program in recent years by nonactive beneficiaries may have heightened total per capita use of health care, at least for some types of services. Between 1985 and 1986, direct admissions by nonactive beneficiaries living inside catchment areas declined by about 10 percent. Simultaneously, CHAMPUS admissions by beneficiaries living inside catchment areas rose by about 18 percent. This apparent shift of workload from direct care to CHAMPUS may have contributed to a rise in per capita use.

Evidence of this may be found in a statistical link between direct admissions and CHAMPUS admissions across all catchment areas in 1985, based on a regression analysis of cross-sectional data. For surgical and obstetrical and gynecological care, a decrease of 10 percent in the number of direct admissions was associated with an increase of 15 percent in the number of CHAMPUS admissions for those types of care.[10] For medical illnesses, however, a 10 percent decrease in direct admissions was associated with only a 5 percent increase in

---

8. In New England, for example, hysterectomy rates ranged from a low of 30 per 10,000 people in one Vermont community to a high in one Maine community of 90 per 10,000 residents. See Philip Caper, "The Physician's Role" in Frank McArdle, ed., *The Changing Health Care Market* (Washington, D.C.: Employee Benefit Research Institute, 1987), p. 37; also, John Wennberg, "Should the Cost of Insurance Reflect the Cost of Use in Local Hospital Markets?," *New England Journal of Medicine*, vol. 307, no. 22 (November 25, 1982).

9. Joseph Restuccia and others, "The Appropriateness of Hospital Use," *Health Affairs*, vol. 3, no. 2 (Summer 1984). Another study, while also finding that about 23 percent of admissions in a sample of nonelderly adults were inappropriate, calls into question the view that low-use areas necessarily have low levels of unnecessary care. See Albert Sier and others, "Inappropriate Use of Hospitals in a Randomized Trial of Health Insurance Plans," *New England Journal of Medicine*, vol. 315, no. 20 (November 13, 1986).

10. In a synergistic way, high CHAMPUS use may promote greater use of direct care, especially of ancillary services. That is because CHAMPUS patients are free to visit military clinics to have tests performed or to fill prescriptions. Sources have said informally that in the Navy, for instance, about one-third of all directly filled prescriptions are written by private physicians.

CHAMPUS admissions. Thus, the overall effect of shifting workloads may differ depending on the types of care most affected.

Heavy use of CHAMPUS almost certainly adds to the overall cost of care, since it is generally cheaper to treat patients in an existing military treatment facility than under CHAMPUS. As shown in Table 5, the average cost to the government per hospital day under CHAMPUS usually exceeds the marginal or incremental cost of a hospital day under the direct care system (this year's change to a new method of prospective reimbursement will narrow the difference between CHAMPUS and direct care). For example, it costs the government an average of $480 a day to hospitalize a retiree under CHAMPUS; if that CHAMPUS patient were shifted to a military hospital, the cost might average between $125 and $380 a day.[11]

FACTORS CONTRIBUTING TO HIGH USE

Because of shortcomings in the design of the military health care system, providers and beneficiaries both contribute to the heavy use of medical care services, particularly of high-cost hospital care. To redirect or curtail use, the Defense Department may have to address the system's budgetary disincentives, its staffing arrangements, and its cost-sharing provisions.

Budgetary Disincentives

The military budgetary process gives health care providers little incentive to curb per capita use of medical services, because it allocates funds by workload. For a fixed amount of resources, the military hospital that generates the greater number of visits or patient-days will appear to be more productive, even though the health status of the beneficiaries actually being served may not be improved. Workload receives heavy emphasis because the beneficiary population is not

---

[11] Some of the disparity in cost may stem from differences in case-mix. That is, the typical CHAMPUS patient may be sicker, may require more intense treatment, than the typical direct care patient. Thus, unit costs estimated on the basis of actual direct care workloads may understate the expense of treating comparable CHAMPUS patients directly.

TABLE 5. ESTIMATED COST TO THE GOVERNMENT OF A HOSPITAL DAY IN 1988

	Direct Care		CHAMPUS Care [d]	
Clinical Area	Low [a]	High [b]	Active	Retired [e]
Medical	125	380	865	480
Surgical	165	505 [c]	1,500	730
Obstetrics/Gynecology	200	625	1,100	560
Psychiatry	90	275	385	255

SOURCE: Congressional Budget Office computations from Defense Department data.

[a] Based on the operation and maintenance component of the medical reimbursement rate for 1987 ($155, or 35 percent of the total), adjusted for inflation and weighted by clinical area proportionally to the high estimates.

[b] Derived from multiple regression equations that related each hospital's operating costs by clinical area in 1984 to the number of its admissions and bed-days and its referral status (operating costs are generally 10 percent to 30 percent higher in the larger facilities that admit numerous referrals), adjusted for inflation and for average lengths of stays in 1985. See *MHSS Sizing Model Technical Description*, VRI- DMR-1 FR86-1(R), (Ann Arbor, Mich.: Vector Research, July 3, 1978).

[c] Does not reflect separate cost equations for clinical areas of otorhinolaryngology, urology, and orthopedics.

[d] Based on CHAMPUS costs in 1986 adjusted for the expected rise in the medical service part of the Consumer Price Index.

[e] Costs to the government for retirees and their dependents is lower than for active-duty dependents because of the relatively high cost- sharing requirements.

well defined; local medical managers do not really know how many nonactive beneficiaries their facilities serve.[12]

Since 1956 the Defense Department has measured output in military hospitals with the Composite Work Unit (CWU), a weighted sum of bed-days, admissions, live births, and outpatient clinic visits.[13] Recently, the Department has begun using the Health Care Unit (HCU), a weighted sum of variables like the CWU but broken down by clinical categories (for example, the HCU gives greater weight to surgical admissions than to medical admissions).[14] The Defense Department is in the midst of developing diagnosis-related groups (DRGs) for direct care use. This sophisticated inpatient classification system will more accurately highlight differences in case mix (output) among military hospitals, and perhaps discourage excessive use of health care services, but its full implementation lies several years away.

---

[12] If the beneficiary population were better defined, the Defense Department could match the amount of resources available for peacetime care with the population to be served. The military health care budget would show the average annual cost per eligible beneficiary; such a "cost per capita" would incorporate both inpatient and outpatient services. Over time, any increase in cost per capita would signal an inefficient use of resources, assuming that the health status of the beneficiary population was stable. See Kyung Bay and Lawrence Nestman, "A Hospital Service Population Model and its Application," *International Journal of Health Services*, vol. 10, no. 4 (1980).

Though the budgeting process rewards military managers for higher workloads, it does not necessarily penalize them for letting patients use CHAMPUS. Until 1975, each military service provided funding for CHAMPUS. Following the establishment of an Office of Civilian Health and Medical Program of the Uniformed Services (OCHAMPUS) in December 1974, the Congress transferred CHAMPUS funding to the Operation and Maintenance appropriation for Defense Agencies, under the oversight of the Assistant Secretary of Defense for Health Affairs. CHAMPUS contracts with five private organizations to act as fiscal intermediaries and actually receive, process, pay, or deny beneficiaries' claims.[15]

Soon after CHAMPUS funds were segregated in their own account, a major government study foresaw trouble. The 1975 Military Health Care Study Task Force expressed concern that neither the Surgeons General nor local medical facility commanders would have any incentive to conserve on the use of relatively high-cost CHAMPUS, even though their joint actions greatly influence the de-

---

13. CWU = (# of occupied bed-days) + 10 x (# of admissions) + 10 x (# of live births) + (# of outpatient clinic visits). The formula has two serious drawbacks. It ignores differences among bed-days; a tonsillectomy patient's day counts just as heavily as an oncology patient's day. And it favors inpatient over outpatient methods of care; a military hospital would have to handle about 50 outpatient visits to equal one average hospital stay.

14. See *Refinement of the Health Care Unit*, VRI-DHA-4 WN83- 13(R) (Ann Arbor, Mich.: Vector Research, October 1983).

15. Blue Cross/Blue Shield of Rhode Island processes claims for the Northern Region; Blue Cross/Blue Shield of South Carolina manages the Southeastern and Southwestern Regions; Blue Cross of Washington-Alaska manages the Northwestern Region; Hawaii Medical Service Association manages Hawaii; and Wisconsin Physicians Service manages the South-Central and Mid-Atlantic Regions.

mand for CHAMPUS.16/ Recent CHAMPUS cost growth, triggered largely by a decline in direct care admissions, establishes the prescience of the Task Force. To hold the services more accountable for their actions, the Administration's budget for fiscal year 1988 apportions CHAMPUS funds directly to the Army, Navy, and Air Force.17/ It is not yet clear how the three services will actually relate their CHAMPUS funds to the performance of their individual facilities.

Inefficient Use of Military Hospitals

Budgetary disincentives only compound the relatively ineffective use of existing military treatment facilities. Though CHAMPUS spends more than $1 billion a year on hospital care, the system of direct care has far more bed space available for normal peacetime use (bed capacity or "normal" beds) than it has operating beds: only 60 percent of available bed space was operational in 1985.18/

Some excess capacity is of course desirable, since military hospitals must stand ready to handle a surge of casualties in wartime. Yet the need for a surplus cannot explain the wide variation among the 129 individual facilities for which data are available: 12 military hospitals operated less than 30 percent of their available bed space, 50 operated between 30 percent and 59 percent, 44 operated between 60 percent and 80 percent, and only 23 operated more than 80 percent. Nor can wartime readiness contingencies explain why Army and Air Force hospitals operate two-thirds of their available bed capacity, whereas Navy hospitals operate less than half of theirs. (Not coin-

---

16. Department of Defense, Department of Health, Education, and Welfare, Office of Management and Budget, *Report of the Military Health Care Study, Supplement: Detailed Findings* (December 1975) p. 721.

17. This followed action by the Congress (in the Defense Authorization for 1987) to create a special CHAMPUS transfer account, from which each service would have had to draw funds periodically to pay for civilian care.

18. Hospitals generally are considered to be operating at capacity when their bed occupancy--the proportion of a facility's operating beds filled on average over some period--lies between 80 percent and 85 percent of operating beds. Military hospitals aim to operate only enough of their available beds to achieve full occupancy. During fiscal year 1985, they reached 72 percent on average.

cidentally, beneficiaries living in Navy catchment areas make greater use of CHAMPUS than do those living in the other services' areas.)19/

Causes of Variation. Some of the causes of the excess capacity will be difficult to alter. One is the thrust of modern medicine toward more outpatient treatment. To meet the rising demand for outpatient care, the services have had to convert some of their available bed space to outpatient clinic use, particularly in older facilities with dated designs.20/ Such space will not easily be converted back to inpatient use. Thus, newer hospitals (defined here as those built after 1974) commonly maintain a higher proportion of operational beds than do older facilities, with an estimated advantage of about 12 percentage points.21/

Another reason for excess capacity is differences in local needs. Military hospitals located inside catchment areas with large beneficiary populations operate proportionally more beds than hospitals near smaller populations. Something similar happens to military hospitals inside areas where there are comparatively few civilian hospital

---

19. For every 10 direct hospital admissions by nonactive beneficiaries living inside an Army catchment area in 1985, there were 2.1 comparable CHAMPUS admissions; in Air Force catchment areas, there were 2.9 CHAMPUS admissions; and in Navy catchment areas, there were 3.7 admissions.

20. Testimony by LTG Howard Leaf, Inspector General of the US Air Force, before the Military Personnel and Compensation Subcommittee of the House Committee on Armed Services, March 24, 1982. A similar shift from inpatient to outpatient services is also challenging the civilian sector. In response, many hospitals are creating new programs--treating eating disorders and substance abuse for example--to fill their empty beds. Ultimately, though, the trend to less inpatient care may force some hospitals to shut down, or to merge with other institutions. See the roundtable discussion in *Healthcare Financial Management* (November 1986), pp. 26-34.

21. Based on the following multiple regression equation:

$$\begin{array}{lll} \text{OP/NOR} = & 0.51 + 0.35x(\text{POP/NOR}) & - 6.84x(\text{CIV/NORxPOP}) \\ \text{(t Value)} & \quad\quad (4.3) & \quad\quad (1.6) \\ & - 0.17x(\text{NV}) + 0.12x(\text{B75}), R2 = 0.26, n = 126 & \\ & \quad (4.1) \quad\quad\quad (2.7) & \end{array}$$

where

POP = Total beneficiary population in catchment area
OP = Operating beds in catchment area MTF
NOR = Normal beds in catchment area MTF
CIV = acute-care, nongovernmental civilian hospital beds in surrounding catchment area (data from the 1983 American Hospital Association survey)
NV = 1 if Navy catchment area, 0 otherwise
B75 = 1 if built after 1974, 0 otherwise.

beds. Evidently, the services bolster inpatient capability wherever there is scant recourse to civilian health care.

Even controlling for facility age and local needs, Navy hospitals operate proportionally fewer beds than Army or Air Force hospitals. The reason may be that the Navy suffers particularly severe limitations on its health care staff.22/ Its unique sea-shore rotation requirements and intense operational tempo oblige health care providers to spend considerable time overseas, thereby diluting the relative effectiveness of their numbers.23/ Furthermore, recent Navy initiatives to improve quality assurance have diminished individual physicians' productivity.

Personnel Constraints. Other factors that lead to underuse of military facilities could be more easily remedied. To get the overall share of operational beds above 60 percent, and thus make more direct care available, all the services would have to overcome constraints on personnel. Shortages of essential staff, particularly registered nurses, nurse practitioners, and technicians, afflict most military hospitals.24/

---

22. The Navy claims that it lags behind the Army and Air Force in numbers of physicians, pointing as evidence to these ratios of active-duty service members to physicians: Army, 146.82; Air Force, 151.92; and Navy and Marine Corps, 194.96. Naval physicians are responsible for 33 percent more active-duty personnel than are their Army counterparts, and 28 percent more personnel than their Air Force counterparts. (Statement of Major General J. Edward Cassity, Hearings before the Subcommittee on Military Personnel and Compensation of the House Committee on Armed Services, Camp LeJeune, North Carolina, July 7, 1987.)

    A different tack might be to look at the relationship between physicians assigned to catchment area facilities in 1985 and catchment area populations. The active-duty-to-physician ratio was 170 in the Army, 164 in the Air Force, and 217 in the Navy. As above, Navy physicians were responsible for about 30 percent more personnel than their Army and Air Force counterparts. But interservice comparisons changed when active-duty dependents and retired military personnel and their dependents were included. The beneficiary-to-physician ratio was 577 in the Army, 761 in the Air Force, and 725 in the Navy; Navy physicians were responsible for 26 percent more beneficiaries than their Army colleagues, but for 5 percent fewer beneficiaries than their Air Force colleagues.

23. At Camp Lejeune, for example, a team of surgeons and nurses representing about 20 percent of the hospital's surgical capability must deploy for about 90 days yearly with operational Marine units.

24. Anecdotal evidence points to the importance of nursing staff in operating available bed space. Two years ago, for instance, a nursing shortage caused Walter Reed temporarily to reduce its capacity by 80 beds, the equivalent of two wards. *U.S. Medicine*, vol. 23, nos. 9 and 10 (May 1987).

    The extensive use of nonavailability statements (NAS) further attests to the importance of staff shortages. Local military medical commanders may issue an NAS when proper facilities are not available, or when it is medically inappropriate to use the military hospital, or when professional

(Continued)

By and large, the services have succeeded in recruiting and retaining enough physicians to meet peacetime needs (though not wartime needs, as discussed below). About two-thirds of the roughly 13,200 physicians on active duty staff military hospitals in the United States, augmented by about 500 civilian physicians. On average across catchment areas, the ratio of population to physicians compares well with norms in the civilian sector.[25] Still, shortages persist in certain physician specialties such as surgery, radiology, and orthopedics.

The nursing shortage poses a greater problem, primarily because of difficulties in recruiting civilians. Whereas only one physician in eighteen in a military hospital is not on active duty, roughly one nurse in five is a civilian.[26] Diminishing numbers of graduate nursing students nationwide mean keener competition, which oftentimes the military loses because it cannot match benefits offered in the private sector. The civilian nursing shortage bodes especially ill for the Navy,

---

24. Continued

capability is not available. In 1985 they issued about 81,500 NAS, roughly one for every seven patients admitted directly. Unavailable professional capability was the reason cited in 42 percent of the NAS. Statistical equations show that the more physicians assigned to a hospital, the fewer the number of NAS: in general, a 1 percent increase in the number of physicians was associated with a 0.9 percent decrease in the number of NAS issued because of unavailable professional capability. This finding is based on the following weighted least squares equation:

$$\begin{array}{lll} \ln(\mathrm{NASP}^{*}\mathrm{W}/\mathrm{ADM}) = & 1.85\mathrm{x}\ln(\mathrm{W}) & -\ 0.92\mathrm{x}\ln(\mathrm{PHY}^{*}\mathrm{W}) \\ (t\ \text{value}) & (7.2) & (6.1) \\ & +\ 0.18\mathrm{x}\ln(\mathrm{W})\mathrm{x}\mathrm{NAVY},\ \mathrm{R2} = 0.67,\ n = 115 & \\ & (3.0) & \end{array}$$

where

NASP = # of NAS issued because of unavailable professional capability in military hospital i
W = Square root of the catchment area population
ADM = # of admissions in the military hospital
PHY = # of physicians in the military hospital
NAVY = 1 if a Navy facility, 0 otherwise.

25. When the number of active and nonactive beneficiaries living inside catchment areas is compared with the number of physicians in military hospitals, the ratio for Army areas is 577; for Air Force areas, 761; and for Navy areas, 725. (These ratios probably overstate population per physician because they exclude medical staff assigned to free-standing clinics.) By comparison, desirable ratios drawn from the health planning literature range from 534 to 989 people per physician. In civilian health maintenance organizations (HMOs), ratios vary between 651 and 1,495. See Charles Phelps and others, *Health Care in the Military* (Santa Monica, Calif.: RAND, June 1984), pp. 139-142.

26. Because of service differences in defining personnel, the use of "nurse" here denotes registered nurses, operating room nurses, nurse practitioners, and physician assistants.

because a relatively high proportion of nurses in its hospitals--one nurse out of three--are civilian.

Cost Sharing

"If you're sick you go to the doctor, if you're not sick you don't." Not so. Medical care resembles other goods and services insofar as consuming more care means consuming less of something else.27/ Civilian experience shows that when care is free, patients will make much heavier use of medical services than when it is not. For that reason, cost sharing has become increasingly common in private health care plans, and in dollar amount it has risen significantly since 1982.28/ In contrast, military beneficiaries share a relatively small part of their costs, as is discussed below. Greater cost sharing could reduce the flow of outpatient visits through military hospitals, and possibly free resources for use in other clinical areas.29/

Present Cost Arrangements. Direct care is available to military beneficiaries at very low cost. Direct-care hospital patients who are retired officers pay \$3.85 a day, retired enlisted personnel pay nothing, and dependents pay \$7.85 a day (but at least \$25 a stay). Outpatient visits are free of charge, though the Secretary of Defense has statutory authority to impose modest charges.

Under the CHAMPUS program, outpatient care is subject to cost sharing. All users must pay a deductible of \$50 a person or \$100 a family before CHAMPUS will pay any charges. After they meet the deductible, CHAMPUS pays 80 percent of allowable charges for

---

27. Joseph Newhouse, *Medical Costs, Health Insurance and Public Policy*, P-4274-1 (Santa Monica, Calif.: RAND, May 1970).

28. Since 1982 the percentage of health plan participants in medium and large business establishments with a deductible of \$100 has declined dramatically, while the percentage of participants with deductibles of \$150 or more has risen even more dramatically. (See Frank McArdle, ed., *The Changing Health Care Market* (Washington, D.C.: Employee Benefit Research Institute, 1987), p. 10.

29. Interestingly, some health care plans have reduced per capita nonpsychiatric outpatient visits by providing psychotherapy. One Army clinical psychologist obtained similar results while practicing overseas. His psychological treatment reduced by 64 percent the mean number of outpatient visits in a "treatment" group of high users. However, the study's small size and the clinic's isolated setting make generalization risky. See Paul Longobardi, "The Impact of a Brief Psychological Intervention on Medical Care Utilization in an Army Health Care Setting," *Medical Care*, vol. 19, no. 6 (June 1981).

dependents of active-duty personnel, and 75 percent of allowable charges for retirees and their dependents. Since "allowable charges" reflect only what most, but not all, providers have billed for particular medical services, beneficiaries' out-of-pocket expenses may actually exceed 20 percent or 25 percent of total charges.

For inpatient care under CHAMPUS, dependents of active-duty personnel pay whatever they would have paid for treatment in a military hospital, subject to an annual $1,000 cap on out-of-pocket expenses. Such low-cost hospital care, combined with relatively high outpatient deductibles and copayments, encourages dependents of active-duty personnel to favor inpatient over outpatient procedures.30/ Other beneficiaries--retirees and their dependents--pay the lesser of $175 for every day in the hospital or 25 percent of billed hospital charges, with a $10,000 limit on their annual out-of-pocket expenses. So in theory every retired military family is at risk of very high expenses; in practice, thanks to other health insurance, fewer than half run such risks. Survey data show that almost one retired family in two has private health insurance, often obtained through a family member's civilian employer. (One active-duty family in ten is similarly covered.) CHAMPUS is a second payer, meaning that it picks up those charges uncovered by private insurance, and consequently privately insured inpatients can avoid paying most or all of their CHAMPUS copayment. Thus, since CHAMPUS is an automatic entitlement (with no premiums), beneficiaries may be encouraged to carry duplicate insurance coverage because they can expect to get back at least the cost of private premiums through reduced copayments.

About 15 percent of the retired families who do not have private health insurance buy CHAMPUS supplemental insurance. These plans, often sold by beneficiary associations and credit unions, generally pay the 25 percent of hospital charges not covered by CHAMPUS. Some cover outpatient payments and even the outpatient deductible. Though such plans protect patients against catastrophic

---

30. To counter this disincentive to economize, CHAMPUS pays for some outpatient surgical procedures at the inpatient rate.

losses, they too may also have the unfortunate effect (for CHAMPUS) of diluting the restraining influence of cost sharing.31/

UNINTENDED CONSEQUENCES OF REFORM: THE PROBLEM OF "GHOST CARE"

A number of factors contribute to the high use of military health care. Altering these factors could reduce use and so cut costs. At the same time, such changes could produce unintended effects that would work to raise costs.

The potential for unintended consequences stems largely from the prevalence of "ghost care," or care that takes place outside the military health care system. Only one-quarter of the military families living in the United States (excluding single active-duty personnel) now obtain all their outpatient care--and, for reasons noted below, most of their inpatient care--in military treatment facilities. They are defined here as **military-reliant**. About three-fifths of military families get outpatient care from both military and civilian medical practitioners; roughly half in this category show **military preference** and the rest show **civilian preference.** Survey data suggest that these "crossover" households are as likely to enter a civilian hospital as a military hospital. And one military family in ten uses only civilian health care providers, and so is defined as **civilian-reliant.**32/ (About 5 percent of military families reported receiving no outpatient care, and so are not classified.) The percentages of families in each outpatient category vary between active-duty and retired families and by location and service (see Table 6).

Families that are not military-reliant use CHAMPUS to pay for only part of their civilian care. A substantial amount of the civilian care they receive is "ghost care," so called because it is financed by

---

31. Diana Walsh, and others, *Designing Cost-Effective Employee Health Plans* (New York: Pergaman Press, 1982), p. 6.

32. These terms and their analytic framework were developed by the RAND Corporation. See Charles Phelps, Susan Hosek, and others, *Health Care in the Military* (Santa Monica, Calif.: RAND, June 1984), pp. 28-30.

TABLE 6. CLASSIFICATION OF MILITARY FAMILIES BY THEIR OUTPATIENT BEHAVIOR AND BY LOCATION (In percent)

Type of Family	Military-Reliant	Showing Military Preference	Showing Civilian Preference	Civilian-Reliant	No Use of Care
Inside Catchment Areas					
Active-Dependent a/					
Army b/	50	39	8	1	1
Navy b/	40	45	11	1	3
Air Force b/	48	43	6	0	2
All	46	42	9	1	2
Retired					
Army b/	25	38	27	7	3
Navy b/	13	34	39	11	2
Air Force b/	17	39	34	7	3
All	19	37	33	8	3
Survivor					
Army b/	22	31	30	12	5
Navy b/	12	29	34	20	4
Air Force b/	12	33	33	17	5
All	16	31	33	16	5
Noncatchment Areas with Ambulatory Clinics c/					
Active-Dependent a/	22	43	28	2	6
Retired	10	29	43	16	2
Survivor	4	19	43	26	8
Noncatchment Areas d/					
Active-Dependent a/	17	34	31	9	9
Retired	4	12	47	29	7
Survivor	5	9	39	35	12

SOURCE: Congressional Budget Office estimates using the *1984 Military Beneficiary Health Care Survey*.

a. Excludes households composed of a single active-duty member.

b. Refers to service affiliation of the nearest military hospital.

c. Includes families living outside a catchment area but within 20 miles of a free-standing military outpatient clinic.

d. Includes families living outside a catchment area and more than 20 miles from a military outpatient clinic.

nondefense sources. Survey data indicate that for every ten hospital admissions of nonactive beneficiaries paid in whole or in part by CHAMPUS, another four and one-half hospital admissions are covered by Medicare, and eight and one-half are covered by private health insurance or some other source.

How might shifts in ghost care affect costs? Statistical analysis suggests that as more direct care becomes available, more families will rely on it. This implies that improved staffing at military treatment facilities would lead some civilian-preference families to become military-preference families. Since medical problems uncovered by military physicians are usually referred to specialists in military hospitals (thus providing a "referral base"), inpatient costs as well as outpatient costs might be affected. To the extent that families shifted to direct care from CHAMPUS, which is comparatively more expensive, total costs to the government would decline. But for those families who had been getting ghost care financed by nondefense sources, total costs to the government would rise. (Appendix C gives details of the statistical analysis of family behavior and discusses the effects of supplying more direct care.)

EFFECTS OF POTENTIAL REFORMS ON READINESS AND SATISFACTION

Redirecting or curtailing the use of health care services would also have major implications for wartime medical readiness and for the satisfaction of beneficiaries. Potential reforms could enhance wartime readiness, though probably by modest amounts. They might also heighten beneficiary dissatisfaction with the health care system, though perhaps less than sometimes thought.

Wartime Medical Readiness

The overriding purpose of the military health care system is to be ready in time of war. The ability to treat battlefield casualties and to return as many as possible to duty (known as "recycling" the wounded) would be crucial to sustaining U.S. forces in a major conventional conflict in Europe. To provide that ability in the early days or weeks of combat, before large numbers of civilian physicians were mobilized, the military services would need to have physicians and support personnel on active duty capable of rendering the necessary surgical treatment.33/ A reform that increased surgical workloads in military hospitals, thus allowing the services to keep more surgeons, surgical nurses, and anesthesiologists on active duty, might therefore enhance wartime capability. The fact that patients generally have better surgical outcomes in hospitals with high volumes of surgical procedures may mean that such a reform would also improve the caliber of care delivered in wartime, as well as in peacetime.34/

But no reform of the health care system is likely to alter significantly the gap between peacetime and wartime requirements for active-duty personnel.35/ At the end of fiscal year 1985, about 1,400 surgeons served on active duty (including residents, but excluding physicians in nonpatient-care billets), about 80 percent of whom were stationed in hospitals in the United States. During 1985, military hospitals in the United States admitted roughly 123,000 surgical patients who were not on active duty; CHAMPUS handled another 38,000 such patients who lived inside catchment areas. If military hospitals had drawn all of those CHAMPUS admissions (a far-fetched assumption), the services might have been able to accommodate an additional 437 surgeons--a 31 percent increase in peacetime strength.36/ Yet in wartime the services might require

---

33. The Selective Service does not know the rate at which medical personnel could be drafted if mobilization occurred, in part because the government has no specific legal authority to register or induct health professionals. See General Accounting Office, *Will There Be Enough Trained Medical Personnel in Case of War?* (June 24, 1981). Reserve physicians will also play a critical role in wartime. But combat might begin without enough warning to mobilize reserve physicians; moreover, the reserves too are understaffed in surgical specialties. See Susan Hosek and others, *Reconciling Air Force Physicians' Peacetime and Wartime Capabilities: Demonstration of a Workforce Design Methodology*, R-3202-AF (Santa Monica, Calif.: RAND, August 1985).

34. Joyce Kelley and Fred Hellinger, "Physician and Hospital Factors Associated With Mortality of Surgical Patients," *Medical Care*, vol. 24, no. 9 (September 1986).

35. One reason is that civilian patients primarily use basic services in the specialties of family practice, internal medicine, pediatrics, obstetrics, and gynecology. Susan Hosek and others, *Reconciling Air Force Physicians' Peacetime and Wartime Capabilities.*

36. This assumes that the number of surgeons is proportionate to workload, which is sufficient for purposes of illustration. In fact, such an increase in military workloads would probably occasion a smaller rise in the number of active-duty surgeons, perhaps around 300.

about 7,000 surgeons.37/ Thus, a 31 percent increase in peacetime strength would close only 8 percent of the wartime gap.

Moreover, few civilian patients, even surgical patients, have war-related diagnoses. Under present peacetime conditions, military health care providers have limited opportunity to practice war-related skills. Researchers from the RAND Corporation, after reviewing the records of 274,000 direct care patients, found that only 3.6 percent reported any war-related diagnoses; 90 percent of them belonged to the "less wartime specific" category (as opposed to "more wartime specific" diagnoses).38/ Presumably most CHAMPUS diagnoses are also lacking in war-relatedness.39/

Beneficiary Satisfaction

Beneficiaries gauge their satisfaction with military health care by various criteria, among them the cost of receiving care, their freedom of choice, their access to care, and the quality of service. On these grounds, many beneficiaries are unhappy: at least one active-duty member in five feels dissatisfied with military medical care.40/ Indeed, growing dissatisfaction may be one of the factors leading to increased reliance on civilian health care providers.

Dissatisfaction can cause tangible harm, because health care is a crucial part of the military's compensation package. Many active-

---

37. Predictions of wartime requirements are tenuous because each service estimates its medical manpower needs in its own way. Critics have noted wide disparities in the services' estimates of the numbers and types of medical personnel needed to care for combat casualties. Efforts are under way to perfect a common model for estimating medical manpower requirements. See General Accounting Office, *Medical Readiness: Progress in Stating Manpower Needs* (April 1987).

38. Physicians stationed in inner cities would be exposed to larger numbers of trauma patients; many inner-city civilian hospitals have case mixes closer to probable wartime mixes than do military hospitals. George Goldberg, *Israeli Military Medical Experience: Ideas for the U.S. Air Force's Medical Service?* N-1924- AF (Santa Monica, Calif.: RAND, August 1982).

39. It is by no means certain which of the following would add more to wartime readiness: shifting a surgical operation from CHAMPUS to a military hospital, or forgoing the inpatient procedure entirely and applying the resulting savings to the purchase of a deployable mobile hospital and accompanying equipment. Because of shortages of deployable medical systems, the services' wartime medical units may be as little as 30 percent mission-capable.

40. Findings from the 1985 Defense Department Survey of Officer and Enlisted Personnel. See Defense Manpower Data Center, *Description of Officers and Enlisted Personnel in the U.S. Armed Forces: Supplementary Tabulations from the 1985 DoD Survey of Officer and Enlisted Personnel*, vol. 3 (June 1986).

duty personnel place high value on their medical care benefits. If the services' attempts to control use were to stir even wider unhappiness, the willingness of military personnel to stay in service (that is, retention rates) might erode.

Controls on use need not inevitably provoke dissatisfaction. Military beneficiaries may be willing to give up some benefits in an even exchange for other gains. For example, military beneficiaries are very satisfied with the low cost of their health care. But they may be willing to pay higher prices as part of other changes. When asked in the 1984 beneficiary survey whether they would be willing to pay $5 for each outpatient visit to a military facility in return for various new CHAMPUS benefits, three beneficiaries out of four said yes.[41]

Many beneficiaries may even be willing to give up the freedom to go to a physician of their own choosing. Under CHAMPUS, beneficiaries may see whomever they want as outpatients. Quite the opposite happens in civilian health maintenance organizations, where members are usually restricted to an affiliated physician. Yet in a 1985 survey, 47 percent of married officers and 36 percent of married enlisted personnel expressed a willingness to join an HMO (with a monthly fee of $20) as an alternative to CHAMPUS; one-third of officers and enlisted personnel were not willing, and the rest did not know.

---

41. Findings from the 1984 Military Health Care Survey. Dental care was the most highly preferred new CHAMPUS benefit. Though outpatient visits are still free, the Defense Department has begun offering a lost-cost civilian dental program to active-duty families, following Congressional authorization in 1986.

CHAPTER III

THE CHAMPUS REFORM INITIATIVE

The centerpiece of the Administration's efforts to contain military health care costs is the CHAMPUS Reform Initiative. CRI is a strategy that aims to harness private interest for public gain. It envisions placing several private organizations at risk for providing civilian health care, by awarding them fixed-price contracts. Contractors will have two main tools to control utilization, and hence their risks: sharing arrangements with military treatment facilities for staff and resources; and "preferred provider organizations" or PPOs--groups of civilian hospitals or physicians that sign subcontracts to offer discounted health services. PPOs are an increasingly popular strategy among private-sector employers to hold down costs.

In a preliminary estimate, the Defense Department expects that nationwide implementation of CRI (due by 1991) will save about $200 million a year over the conventional CHAMPUS program, by reducing cost growth from excessive levels experienced over the last several years. But simulations conducted for this study suggest that so ambitious a change as the CRI carries considerable cost risks: it may save money, but it may also add substantially to costs.

HIGHLIGHTS OF THE CHAMPUS REFORM INITIATIVE

Up to this time, the CHAMPUS program has contracted with private organizations known as fiscal intermediaries to process, pay, or deny beneficiary claims. The CHAMPUS Reform Initiative will create a new group of active program managers. In each of six geographic regions, the Defense Department will contract with one organization--a health care company or a consortium of private firms--to serve not only as a CHAMPUS administrator but as a CHAMPUS carrier. Under fixed-price contracts, these CRI carriers will be at risk for providing civilian health care to all nonactive beneficiaries living in their areas.[1]

CRI's Fixed-Price Contract

The Defense Department will pay carriers per service, not per beneficiary. Given the guarantee of a certain minimum workload to be accomplished in military treatment facilities, CRI carriers must project the number of civilian outpatient visits and civilian inpatient days that they will provide to beneficiaries in their areas (target use) and estimate a unit price per visit and per day (target price), for the first contract year and for four option years.

During the first year of the contract, carriers must live within their projections, except when they are affected by changes in military workload. If a CRI carrier's beneficiaries use more civilian services than expected, as a direct result of military hospitals and clinics treating fewer patients than expected, then the government will retrospectively reimburse the carrier (at some negotiated unit price) for the extra civilian care. Conversely, if a carrier delivers less care than expected, because beneficiaries receive more direct care than was expected, the government will reduce its payments.

Carriers will not be able to recoup for unexpected civilian use that does not trace back to the military. They may, however, have a prospective opportunity to adjust their otherwise fixed prices in the option years. If the Defense Department wishes, it can revise target prices and target utilization, and adjust option-year payments accordingly. Of course, the government may also simply end the contract.

CHAMPUS Prime and Preferred Provider Organizations

Under the fixed-price contracts, CRI carriers must continue offering the conventional CHAMPUS benefit package. In addition, they are to offer a new benefit package known as CHAMPUS Prime, a mix of conventional CHAMPUS benefits and enhanced primary and preventive care benefits, all delivered through preferred provider organizations (PPOs). Beneficiaries may be allowed to choose to enroll in CHAMPUS Prime at any time. Carriers will rely heavily on CHAMPUS Prime's PPOs to stay within their use targets.

---

[1] CRI is to proceed in three phases. In the first, now under way, the Defense Department has awarded a contract for one geographic subregion (California and Hawaii).

Definition of PPOs. PPOs are groups of providers, both hospitals and physicians, that agree by contract to offer discounted services to purchasers of health care services. Some PPOs are sponsored directly by health care providers, others by insurance carriers (such as Blue Cross/Blue Shield). Still others are entrepreneurial ventures sponsored by private investors or third-party claims administrators. By February 1986, nationwide enrollment in health care plans that include PPOs as an option stood at 6.2 million, and close to one-third of the nation's patient-care physicians were associated in some manner with a PPO.2/

The most common type of PPO leaves beneficiaries free to choose any physician or hospital, but offers financial incentives (lower deductibles or coinsurance) to choose from among the preferred providers. About one PPO in four also offers added health benefits to those choosing preferred providers, typically physicals and well-baby care. Physicians working through these PPOs do not make prepayment arrangements, and so assume none of the financial risk of providing care. Another PPO form, usually set up by self-insured employers, is the exclusive provider organization (EPO), which does not allow beneficiaries to choose physicians or hospitals outside the network of providers.

CHAMPUS Prime will offer a PPO modeled on exclusive provider lines, but the decision to enroll in CHAMPUS Prime will be voluntary. Those who wish may continue to use conventional CHAMPUS. The Defense Department hopes that allowing beneficiaries to choose between conventional CHAMPUS and CHAMPUS Prime will put pressure on carriers to keep prices down and quality up. As an inducement to join CHAMPUS Prime, enrollees will pay less out of pocket (carriers may reduce or eliminate CHAMPUS deductibles or coinsurance, though they may charge nominal fees for outpatient care services), and they will receive added primary and preventive care benefits. In

---

2. John Gabel and others, "The Emergence and Future of PPOs," *Journal of Health Politics, Policy and Law*, vol.11, no.2 (Summer 1986).

the Administration's view, lowered costs and enhanced benefits are CRI's tools for easing access to military health care. The trade-off is that enrollment may restrict beneficiaries' freedom of choice, since CRI carriers will be able to deny benefits for care received outside the network of preferred providers. All beneficiaries will remain able to use military hospitals and clinics as space is available, whether or not they join CHAMPUS Prime.

HOW CRI MAY SAVE MONEY

Civilian experience suggests that Preferred Provider Organizations (PPOs) and hence CHAMPUS Prime might save between 10 percent and 20 percent over conventional health insurance plans.

How PPOs Save Money

PPOs can achieve savings in the following ways, in increasing order of importance:

- PPOs are able to select physicians and hospitals known to be conservative and presumably cost-effective deliverers of health care services, thus reducing the resources used for each episode of care;
- PPOs get discounts from health care providers; and
- PPOs conduct stringent reviews to curb the unnecessary use of services, and thereby reduce hospital admissions or outpatient visits.

Selective Contracting. In practice, very few PPOs strive to contract specifically with low-cost hospitals and physicians. A national telephone survey found that three PPOs out of five use geographic location to choose their preferred hospitals, while only one out of four analyzes insurer claims or other cost data.[3] Only one PPO in ten analyzes physicians' cost data; the major criterion most PPOs use in selecting physicians is whether they have staff privileges at a preferred hospital.

One reason why PPOs do so little selective contracting is to avoid legal challenges from rejected hospitals and physicians.[4] Another is the need to build a broad network of hospitals and physicians as soon as possible, to ensure the organization's viability in a competitive market. Since selective contracting with cost-efficient providers is still an undeveloped area, PPO cost savings under CHAMPUS Prime will probably rest largely on the success of the next two factors.

Discounts. All PPOs seek discounts from billed charges; their ability to get such discounts stems from their power to channel patients to particular health care providers.[5] Typically, the reduction in both physician and hospital payment schedules amounts to 11 percent, with larger PPOs getting bigger reductions. (The "big ten" PPOs, which account for roughly half of total PPO enrollment, get discounts of about 15 percent.)

Discounts may be of less advantage than would appear. First, discount agreements usually apply to projected prices, which themselves may be inflated. Second, increases in utilization--say, an extra outpatient visit or laboratory test--can offset savings from discounts.[6] More significant savings are likely to be achieved through efforts to control use.

Utilization Review. PPOs aim to save money by keeping patients out of hospitals. Their chief tool is utilization review, often managed "in house" but frequently subcontracted out to firms that specialize in review.7/ Nine PPOs in ten run preadmission certification programs, under which beneficiaries or doctors must notify the PPO or a separate review company before a nonemergency hospital stay; the reviewer judges the appropriateness of inpatient care and the length of stay the physician expects. Eight PPOs in ten also review hospital stays "concurrently"; if the patient stays in the hospital beyond some "certified" length of time, the PPO may refuse to pay part or all of the expense. Other measures include mandatory second opinions for surgery, retrospective reviews of claims, and monitoring of physicians' patterns of outpatient practice.

---

[3] John Gabel and others, "The Emergence and Future of PPOs."

[4] For example, a PPO sponsored by Blue Cross/Blue Shield of Maryland was challenged because it excluded two major teaching hospitals in Baltimore. See Eli Ginzberg, "The Restructuring of U.S. Health Care," *Inquiry*, vol. 22 (Fall 1985), p. 278.

[5] Paul Ginsberg and Glenn Hackbarth, "Alternative Delivery Systems and Medicare," *Health Affairs*, vol. 5 (Spring 1986).

[6] Peter Boland, "Questioning Assumptions About Preferred Provider Arrangements," *Inquiry*, vol. 22 (Summer 1985).

How effective are PPOs in reviewing and reducing use, especially for inpatient care? Because of their recent development, no in-depth studies of actual experience are yet available.8/ Fragmentary data and anecdotal evidence suggest that some PPOs have been able to decrease hospital admissions. One PPO plan is said to have reduced the number of hospital days per thousand beneficiaries from 1,300 to 700, or by about 46 percent.

Sharing Staff

In addition to PPOs, another tool that CRI contractors can use to hold down use of civilian services, and ease the problem of growing reliance on CHAMPUS, is to encourage the sharing of staff. It is shortages of professional and support staff, rather than constraints on physical capacity, that force most beneficiaries out of military hospitals and onto CHAMPUS. CRI will let carriers, with the written agreement of individual military medical commanders, hire qualified civilians to fill selective staff shortages, and so intensify use of military hospitals. Sharing is in a carrier's financial interest, since it will generally be cheaper to shift a patient to an existing military treatment facility than to treat that patient in a civilian hospital.

---

7. For a discussion of utilization review, see "Special Report on Medicine and Health," *Wall Street Journal*, April 24, 1987. CHAMPUS now conducts a limited sort of concurrent review by screening hospital stays that exceed 90 days.

8. At least two groups, the RAND Corporation and the Robert Wood Johnson Foundation, are examining PPO effectiveness in depth. (Peter Boland, "Questioning Assumptions About Preferred Provider Arrangements.")

Sharing presupposes a good working relationship between the private carrier and the individual medical commanders in its area. To help this along, CRI calls for a "health care finder," a series of procedures and protocols to coordinate patient care. Carriers must staff liaison offices in each military hospital, and carry out various routing and referral functions. When a patient walks into a liaison office, the health care finder will obtain an appointment with a military physician, a preferred provider, or even a noncontract provider. If the patient needs inpatient care, the health care finder will help decide whether the individual military medical commander needs to issue a nonavailability statement.

EFFECTS ON COSTS

A program as complex as the CHAMPUS Reform Initiative necessarily raises a myriad of uncertainties. Generally, these uncertainties fall into two broad categories:

- Uncertainty about the carriers' eventual accomplishments: how successful will they be at controlling use, sharing resources, and negotiating preferred provider discounts?
- Uncertainty about beneficiaries' reactions to CRI: how many families will join CHAMPUS Prime, how much "ghost care" will they bring with them, and what will they do with their private insurance coverage?

It is too early to tell how CRI will resolve these uncertainties. Indeed, independent evaluators believe that CRI's full effects will not be observed for several years.9/ Nonetheless, because the Congress may have to make far-reaching decisions this fiscal year, it is important to begin now to assess what CRI might do. To that end, this study conducted simulations of CRI's costs under an assortment of alternative assumptions as to carriers' accomplishments and beneficiaries' reactions.

---

9. Susan Hosek and others, *Plan for an Evaluation of the CHAMPUS Reform Initiative*, N-2647-HA (Santa Monica, Calif.: RAND, July 1987).

For each broad category of uncertainty, the simulations define three alternative sets of assumptions, as shown in Table 7. With respect to uncertainty about carriers' accomplishments, there is a "Base Case," a "Favorable Cost Case," and an "Unfavorable Cost Case." And for beneficiaries' reactions, there is a "Best Cost Case" a "Worst Cost Case" and an "Intermediate Cost Case." By applying combinations of these cases, the simulations produce widely varying estimates of CRI's effect on costs.

Alternative Assumptions about Carrier Accomplishments

Four factors are particularly important in defining the effects that carriers may be able to have on costs. They are the reduction in hospital admissions, the size of the outpatient discount, the change in outpatient visits, and the degree of resource sharing. Each is discussed below along with specifics about the assumptions made.

Reduction in Hospital Admissions. Experience with PPOs suggests that CRI carriers will try to contain hospital costs by discouraging hospital admissions. To date, some civilian PPOs have significantly reduced use of hospital care, though not by as much as have other innovations such as health maintenance organizations. (The performance of HMOs will be discussed in the next chapter.) Unfortunately, the empirical evidence is fragmentary. And what civilian experience there is may be of limited relevance to CHAMPUS Prime. Few PPOs give their members the option to receive even lower-cost care from another organization. Yet CHAMPUS Prime participants will remain free to use the military's extremely low-cost facilities. Such discretion could conflict with carriers' efforts to limit use.

In view of these unique features, the Base Case assumes that carriers will reduce hospital admissions under CHAMPUS Prime by a modest 10 percent. The Favorable Case assumes a 20 percent reduction, consistent with the experience of the more successful civilian PPOs. In addition, the Favorable Case also assumes that CRI contractors extend their utilization review to beneficiaries who stay under conventional CHAMPUS, and thereby realize a further 10 percent reduction in CHAMPUS costs. The Unfavorable Case assumes

TABLE 7. CLASSIFICATION OF ASSUMPTIONS FOR ANALYZING THE CHAMPUS REFORM INITIATIVE

Carrier Accomplishments	Assumptions a/ Base	Favorable	Unfavorable
Reduction in Hospital Admissions b/	10	20	5
Hospital Care Shifted to MTF			
CHAMPUS Prime c/	40-20	60-40	20-20
Conventional c/	10-20	20-20	10-20
Reduced Length of Stay in PPO Hospitals d/	0	5	0
PPO Hospital Discounts e/	5	5	0
PPO Physician Discounts	10	20	5
Change in Outpatient Visits f/	10	0	20

Beneficiary Actions	Assumptions a/ Intermediate	Best	Worst
Preferences of Military Families Participating in CHAMPUS Prime	Civilian Preference	Military and Civilian Preference	Military and Civilian Preference
Percent of All Military Households	28	61	61
Ghost-Eligible Care by CHAMPUS Prime Enrollees g/	Some h/	None	All i/
Status of Private Insurance	Dropped	Kept	Dropped

SOURCE: Congressional Budget Office.

a. Percent change relative to the baseline for fiscal year 1988.

b. Reduction applies only to use of medical and surgical care by families enrolled in CHAMPUS Prime who are under civilian physicians' care. In the "favorable" case, a 10 percent reduction also applies to CHAMPUS use by families not enrolled in CHAMPUS Prime.

c. The first figure refers to the shift of patients who would be under the care of a civilian physician; the second figure refers to patients under a military physician's care.

d. The baseline assumes that the new DRG payment system for CHAMPUS will reduce lengths of stay 5 percent; these figures show further changes assumed under CRI.

e. The baseline assumes that the new DRG payment system will reduce average inpatient costs under CHAMPUS by 20 percent.

f. Per capita use of outpatient services under CHAMPUS Prime may rise because of enhanced benefits and lower out-of-pocket costs.

g. Excludes care covered by Medicare.

h. Ghost care received by families who did not receive private insurance reimbursement.

i. Includes ghost care covered by private insurance.

that carriers manage only a 5 percent reduction in use of inpatient facilities. These numbers, though somewhat arbitrary, should bracket the likely effects.

Physician Discounts. Though CHAMPUS has adopted a new, advantageous method for reimbursing hospitals, it still pays physicians on a fee-for-service basis. The civilian experience cited earlier suggests that discount agreements could save CRI carriers at least 10 percent of billed charges. Thus, both the Base and Unfavorable Cases assume 10 percent savings for patients using preferred providers; the Favorable Case assumes 20 percent savings.

Change in Outpatient Visits. Researchers have firmly established that a reduction in cost sharing, through lower deductibles or copayments, leads people to increase their use of health care services. Thus CHAMPUS Prime, if it ends deductibles or substitutes nominal fees for percentage copayments, should induce participants to make greater use of outpatient services. A $5 fee, for example, would represent an 80 percent decrease from the average amount today's CHAMPUS beneficiaries pay out of pocket for each outpatient episode. Results from several civilian health care plans suggest that such a price reduction would prompt a marked increase in the rate of outpatient visits (see Chapter V). Moreover, CHAMPUS Prime will offer benefits not now available under CHAMPUS, which should further expand the demand for outpatient care.

The ultimate effect on outpatient visits will depend not only on price, but on the number and distribution of preferred providers, and on steps taken by carriers to review utilization. The Base Case conservatively assumes that CHAMPUS Prime induces 10 percent more visits per capita than would otherwise occur. Under the Favorable Case, no increase occurs in per capita visits; under the Unfavorable Case, visits rise by 20 percent. All cases assume that a visit under CHAMPUS Prime will cost $5.

Hospital Care Shifted through Resource Sharing. Through agreements to share resources, particularly staff, CRI carriers are expected to reorient military treatment facilities toward providing more elaborate inpatient care. From an examination of nonavailability statements (issued when care is not available in military hospitals), it appears that at least 20 percent and perhaps as many as 60 percent of the medical and surgical admissions under CHAMPUS, inside catchment areas, require professional capability that is not available in military facilities. It remains to be seen, however, whether the military's many small hospitals can perform complex surgical procedures or treat severe medical conditions even with augmented staff. It seems appropriate to assume a wide range of shifting. Under the Base Case, CRI carriers shift 40 percent of CHAMPUS Prime's inpatients from inside catchment areas, and 10 percent to 20 percent of conventional CHAMPUS's inpatients from inside catchment areas, to military hospitals. (The percentage is higher for CHAMPUS Prime patients because the carriers would presumably exercise more control over their use of facilities.) The other two cases vary the shifts from 10 percent to 60 percent.

Assumptions about Beneficiaries' Reactions

A fundamental question is who will enroll in CHAMPUS Prime. Since carriers will be responsible for all care purchased from civilians, they will want to sign up as many beneficiaries under CHAMPUS Prime as possible. But how will military families react? Will large numbers want to join a program that limits their freedom of choice in return for easier access to health care benefits (lower prices and enhanced services)? So long as key details of implementation remain unsettled--among them, the cost of using CHAMPUS Prime, the number of participating providers under CHAMPUS Prime, their location in relation to beneficiaries, and associated changes in the availability of direct care--a precise analysis is not possible.

Nonetheless, current family outpatient patterns offer some clues to future enrollments. Those most likely to join CHAMPUS Prime may be the "crossover" families discussed in Chapter II--the three families out of five that are in the military-preference or civilian-preference categories. Military-reliant families who visit only military medical practitioners seem satisfied with current military facilities. Civilian-reliant families, who presumably hold freedom of choice in especially high regard, may be loath to sever their strong doctor-patient connections. Crossover families, in contrast, are neither totally satisfied with direct military health care nor totally estranged from the system. Accordingly, the simulations considered separately the costs and effects of military-preference families joining

CHAMPUS Prime, civilian-preference families joining, and all crossover families joining.[10]

Just as important as who enrolls is the question of what happens to their so-called ghost care. Civilian-preference families, for instance, receive hospital care from private sources as often as from CHAMPUS: for every medical or surgical hospital admission covered by CHAMPUS, one more hospital admission is paid for by other sources (excluding Medicare). Will these phantom admissions materialize and require payment under CHAMPUS Prime? They well may, because patterns of outpatient care dictate where people go for inpatient care. CHAMPUS Prime enrollees will probably have to use preferred physicians. Medical problems uncovered by those physicians--including the problems that today become ghost care--will likely be referred either to a preferred civilian hospital or, if coordination is working well, to a military treatment facility.

In fact, ghost care materialized the last time that CHAMPUS offered a substantially new benefits package. The Defense Appropriation Act of 1981 allowed CHAMPUS to offer prepaid health benefits--that is, membership in a health maintenance organization (HMO)--on a demonstration basis. CHAMPUS now contracts for prepaid health care benefits with eight HMOs at three demonstration sites: Minneapolis, Houston, and Portland, Oregon (none of which lies within a military catchment area). About 3,000 families are enrolled in these "CHAMPUS Choice" plans. The costs of the demonstration plan have been substantially higher than expected because some of the families who enrolled had never before used CHAMPUS.[11]

---

[10] Preliminary results from a RAND Corporation study of three large employer health plans show that PPOs may or may not garner substantial acceptance by a wide spectrum of employees. In the case of one employer, who offered a choice of two PPOs, two HMOs, and two traditional indemnity plans, 63 percent of employees in the plans with a PPO option were using the PPO. The other two employers offered PPOs as part of their traditional indemnity plans. In one firm, 37 percent of employees used the PPO as their regular source of care; but in the other firm, only 13 percent regularly used the PPO. In all cases, employees faced varying premiums for the different health care plans, which doubtless influenced their choices. Premiums, of course, would play no role under CRI. See Paul Ginsberg, Susan Hosek, and Susan Marquis, "Who Joins a PPO?" *Business and Health*, vol. 4, no. 4 (February 1987).

[11] Department of Defense and Department of Health and Human Services, *Report on the Need for Medicare-CHAMPUS Provider Participation Linkage* (February 1985).

Closely tied to the costs arising from ghost care are possible changes in private insurance coverage. About four crossover families in ten have private health insurance, often obtained through a household member's private employment. Some of these families have an economic incentive to hold duplicate insurance coverage. Since their private plans must pay first for hospital care (CHAMPUS pays only after the private insurer has paid), they may be able to get back the cost of private premiums through their CHAMPUS benefits. Other families may take out private policies to obtain additional coverage, or because they dislike or distrust CHAMPUS's rules and regulations.

The CHAMPUS Choice experience shows that some military families will drop other health insurance once enrolled in a new health care plan.12/ Something similar might happen under a successful CHAMPUS Prime program, especially since membership would reduce the economic incentive to pay for duplicate coverage in at least two ways. For outpatient care, there would be no copayment for a private insurance carrier to bear. And an effective program of resource sharing would enhance the chances for treatment in a low-cost military hospital. Accordingly, this study's simulations assume under both the Intermediate Case and the Worst Case that all CHAMPUS Prime enrollees drop their private insurance; the Best Case assumes no change in private insurance coverage.

Summary of Cost Effects

The cost simulations point up the importance both of beneficiaries' reactions and of carrier's accomplishments in assessing likely costs. Depending on these factors, particularly on beneficiaries' reactions, costs under CRI could rise or fall substantially, as shown in Table 8. All savings and costs are relative to a $2.8 billion benchmark estimate of overall military health care costs for nonactive-duty beneficiaries in the United States in fiscal year 1988 in the absence of CRI (see the footnote in Table 8 for details). The $2.8 billion includes net costs of direct care (assuming that private insurers reimburse the government for their policyholders' direct hospital care) as well as CHAMPUS costs for medical and surgical hospital care and nonpsychiatric

---

12. Office of the Assistant Secretary of Defense (Health Affairs), *Report to Congress on CHAMPUS Demonstration Projects* (September 1987), p. 12.

outpatient care. Costs are adjusted for expected medical inflation and for savings from CHAMPUS's new method of reimbursing hospitals prospectively using diagnosis-related groups. Estimated changes in costs resulting from CRI are hypothetical in that they assume full implementation of CRI in 1988, even though it will at most be under demonstration in that year.

CRI could save substantial sums, perhaps as much as $590 million, if many people join CHAMPUS Prime. In the Best Case of beneficiary reactions, which supposes that all military-preference and

TABLE 8. SUMMARY OF POSSIBLE ADDED COSTS OR SAVINGS ASSUMING FULL IMPLEMENTATION OF THE CHAMPUS REFORM INITIATIVE (In millions of 1988 dollars)

	Assumptions About Beneficiaries		
Assumptions About Carriers	Best	Intermediate	Worst
Base Case			
Hospital costs	-230	-170	390
Outpatient costs	-140	55	410
All	-370	-115	800
Best Case			
Hospital costs	-360	-255	125
Outpatient costs	-230	-10	220
All	-590	-265	345
Worst Case			
Hospital costs	-120	-125	625
Outpatient costs	-75	100	550
All	-195	-25	1,175

SOURCE: Congressional Budget Office.

NOTE: Estimates show changes in costs of medical and surgical hospital care and nonpsychiatric outpatient care relative to a baseline that assumes the following costs for conventional CHAMPUS (in millions of 1988 dollars):

	Direct	CHAMPUS	Total
Medical and Surgical Hospital	$590	$780	$1,370
Nonpsychiatric Outpatient	$1,050	$415	$1,465
Total	$1,640	$1,195	$2,835

civilian-preference families sign up with CHAMPUS Prime, savings would amount to $590 million a year if carriers achieved large savings through their PPOs (their Best Case). Savings would still amount to $195 million even with more modest savings from PPOs (the Worst Case under carrier assumptions), pointing up the importance of beneficiaries' reactions.

At the other extreme, costs could soar. If easier access to care attracts all military-preference and civilian-preference families into CHAMPUS Prime, and if they shift their ghost care and drop their private health insurance (the Worst Case of beneficiary reaction), then costs could swell by as much as $1.2 billion a year assuming not much is saved by the PPOs.13/ Even if savings under the PPOs are substantial, annual costs could rise by $345 million.

As Table 8 shows, many cases lie between these extremes; one of these cases may be the most likely eventual outcome of CRI. But the uncertainty itself might breed apprehension in the private sector and so higher costs. Given the potential cost risks, carriers may demand expensive risk premiums, particularly since CRI's retrospective risk-sharing mechanism offers no protection for added health care brought on by the participation of ghosts. Without the safety margin of a sizable risk premium, carriers might face a serious drain on their reserves.14/

The potential cost risks signal possible gains in satisfaction among beneficiaries. If people tend to react unfavorably from the standpoint of costs--shifting ghost care to CHAMPUS Prime and dropping private insurance--it will be because they appreciate easier access to care, a major objective of CRI. If CRI relieves the problems of

---

13. These estimates differ from figures presented in earlier testimony largely because they include effects on outpatient as well as on inpatient care.

14. The Defense Department's Request for Proposal recognizes the risks facing potential bidders. It states: "The offeror must provide evidence of sufficient financial soundness to safeguard the health care system throughout the performance of the contract. . . .errant estimates of either the number of beneficiaries who will enroll in various plans, or the actual utilization of health care by beneficiaries could impose a greater financial drain than estimated by the offeror, creating a larger then estimated cash flow problem. Should these or other problems arise, offerors must be able to rely on infusions of capital from parent firms or preestablished credit lines with banks sufficient to permit continued operation until such time as the expected payment stream and/or retrospective risk sharing adjustments bring in enough funds to reverse the cash flow drain." (RFP No. MDA903-87-R-0047, *Section L.5: Financial Resources*, p. L-19.)

overcrowding in military clinics and substantial out-of-pocket costs under CHAMPUS, and so encourages more people to use military health care services, the system will be providing comprehensive health care services to proportionally more beneficiaries.

This analysis excludes the possibility that enhanced primary care benefits under CHAMPUS Prime may lead eventually to lower inpatient costs. Preventive care, though it may increase the demand for outpatient care, could reduce hospital admissions in the long run if it prevents minor conditions from escalating into medical catastrophes. The degree to which this effect would narrow the cost risk is open to question.

Comparison with Administration Estimates. The Defense Department looks at the potential cost effects of CRI from a quite different viewpoint. It believes that CRI will moderate the CHAMPUS program's historically excessive rate of cost growth. Based on the last few years' experience--between 1985 and 1986, for instance, the price of a hospital day under CHAMPUS rose by about 16 percent--the Department projects that CHAMPUS costs will rise about 11 percent annually over the next four years in the absence of reform. It then assumes that CRI will limit the rate of growth to 7.3 percent, roughly equivalent to the expected rise in the medical component of the Consumer Price Index. This slower rate of cost growth would lead to savings of about $200 million in 1991, the year of CRI's nationwide implementation.

A difficulty with the Department's method is that recent cost growth is not a reliable guide to CHAMPUS's prospects. Consider three of the factors that may be responsible for the high increases in daily hospital costs. First, shifts out of the direct care system may have altered CHAMPUS's case mix, burdening the program with sicker patients. Thus, the average CHAMPUS day in 1986 may have involved greater intensity of care than did the average day in 1985. The policy changes that caused the recent workload shifts will not necessarily recur over the next few years. Second, major third-party payers (notably Medicare) have tightened their reimbursements, and this may have led hospitals to shift some costs to passive payers, CHAMPUS among them. This will end when CHAMPUS begins to pay hospitals prospectively, and largely sets its own prices. Third, CHAMPUS's old method of reimbursing hospitals rewarded long, if not excessive lengths of stays. This, too, will end under prospective payment.

Moreover, the Department's method does not explicitly take account of the reactions of beneficiaries, including their "ghosts." The Department argues that if costs under CRI appear likely to be higher than under the current system, whatever the reason, then it will not pursue CRI. But some years may pass before all of the effects of changes in ghost care and private insurance coverage materialize under CRI, and by then it could be difficult to alter the system.

As one wag has put it, it is very difficult to make predictions, especially involving the future. Uncertainty about future hospital care prices under CHAMPUS is too great to allow one to base projected savings exclusively on assumptions about cost growth. For this reason, the focus of this study is on the potential for savings and the risks of cost increases, rather than on point estimates of most likely costs over the next few years.

EFFECTS ON MILITARY WORKLOADS

CRI aims to improve the coordination between the military and civilian parts of the health care system. As discussed earlier, better coordination could hold down costs by letting the services use their facilities more fully. But better coordination might also improve wartime readiness by shifting surgical patients to military hospitals. Indeed, simulations show that if carriers accomplish a generous degree of resource sharing, then military treatment facilities will enjoy sizable increases in their medical and surgical workloads--possibly enough to enhance wartime readiness, though not enough to make large reductions in shortages of critical personnel. CRI might also cause a significant decline in numbers of outpatients in military facilities.

Simulated Effects

This study has made a benchmark estimate of military workloads (based on data for 1985, the latest year for which complete details are available). Assuming no CRI, military hospitals admit 191,400 nonactive inpatients for medical care and 114,000 nonactive inpatients for surgical care. When the simulation assumes that CRI carriers shift 20 percent to 40 percent of CHAMPUS's inpatients to existing military treatment facilities--the Base Case for carrier accomplishments--the resulting increase in medical and surgical inpatients in military hospitals ranges between 9 percent and 24 percent (Table 9). The greater the amount of ghost care returned to military hospitals, the greater the gain.

At the same time, CRI might increase occurrences of nonessential inpatient use. If variation across catchment areas is any guide (see Chapter II), many military hospitals may be providing inpatient services that are not strictly necessary. CRI gives military hospitals no particular incentive to provide less "nonacute" care--that is, care that could be provided in other than an acute-care hospital setting. (An example might be a hospital admission for low back pain with orders for oral medication, when the patient is able to walk.)15/ Military hospitals might even end up offering more nonessential inpatient services, if carriers are motivated to shift nonacute care to the military in order to avoid paying for outpatient therapy.

In contrast to inpatient care, outpatient care in military clinics could go down considerably if CHAMPUS Prime alters families' patterns of outpatient care. Thanks to lower out-of-pocket costs and increased convenience, beneficiaries in CHAMPUS Prime may come to rely more on civilians for their outpatient care. As a group, outpatients from military-preference families visit military physicians 75 percent of the time, and outpatients from civilian-preference families visit military physicians 25 percent of the time. Table 9 shows what would happen under the following two assumptions. Assume that the

---

15. The indicated nonsurgical course of therapy for this diagnosis is typically bed rest and pain control, available safely and appropriately in other than a hospital setting. See Ira Strumwasser and others, "Determining Nonacute Hospital Stays," *Business and Health*, vol. 4, no. 4 (February 1987).

TABLE 9. SUMMARY OF POSSIBLE PERCENT CHANGE IN NON-ACTIVE-DUTY PATIENT WORKLOADS IN MILITARY TREATMENT FACILITIES UNDER CHAMPUS REFORM INITIATIVE (CRI)

	Assumptions About Beneficiaries		
Assumptions About Carriers	Best	Intermediate	Worst
Base Case			
Admissions			
Medical	10	10	23
Surgical	12	9	24
Visits a/	-42	-10	-42
Favorable Case			
Admissions			
Medical	13	13	31
Surgical	16	12	33
Visits a/	-42	-10	-42
Unfavorable Case			
Admissions			
Medical	6	6	13
Surgical	7	6	13
Visits a/	-42	-10	-42

SOURCE: Congressional Budget Office.

a. Maximum possible change because it assumes that families enrolling in CHAMPUS Prime change their patterns of outpatient care in favor of preferred civilian providers.

military-preference families who join CHAMPUS Prime take on the traits of civilian-preference families, so that they get three-quarters of their outpatient care from the preferred civilian providers. And assume that the civilian-preference families behave as if they were civilian-reliant. The result, if a large number of beneficiaries join CHAMPUS Prime, would be a 42 percent decrease in visits to military physicians.[16]

---

[16] This percent change refers to total visits for nonpsychiatric care by outpatients who are not on active duty.

Declining outpatient workloads might run counter to service plans for providing more outpatient care directly. For instance, the Army's Medical Enhancement Program calls for assigning a physician to every active-duty family, and plans on hiring 285 more family practitioners over the next few years to reach that goal. And the Air Force's Tactical Air Command has plans to open several satellite clinics that will provide a full range of primary care services in neighborhoods where active-duty families live. In light of such initiatives, not to mention the importance of outpatients in forming a referral base, the services may have difficulty accepting CRI's possible effects on outpatient workloads.

THE STATUS OF CRI

In the spring of 1987 the Defense Department released a request for proposals in order to start CRI in three geographical regions: California and Hawaii; Florida and Georgia; and North and South Carolina. (The request also included one relatively small contract for beneficiaries living in and around New Orleans.) Only three potential contractors responded by the closing date, none of whom bid on the contract for North and South Carolina. During the review process that followed, two of the contractors withdrew their bids, leaving only one contractor and resulting in a negotiated competition rather than a competitive one.

At the time of publication, the Department had just awarded a contract to the one remaining bidder, promising a first, limited test of CRI over the next year or so. Nonetheless, the Congress will be likely to want to consider alternatives to the CRI as it debates solutions to the problems of military medicine. The next chapter discusses alternative approaches that feature enrollment into a specified health care plan.

CHAPTER IV

ALTERNATIVE STRATEGIES USING CAPITATION

Today's military health care system tacitly attaches great importance to freedom of choice. Beneficiaries, whether they live inside or outside catchment areas, are largely free to get health care as is their wont, either directly or through CHAMPUS. They will retain much of this freedom of choice under the CHAMPUS Reform Initiative; they may be allowed to join CHAMPUS Prime at any time during the year, and once enrolled will still be able to use military treatment facilities. But such latitude breeds considerable cost uncertainty, as evidenced by the large variance in cost forecasts discussed in the preceding chapter.

Reducing freedom of choice through means of a closed enrollment--whereby beneficiaries would "enroll" in a specified health plan during a limited open season--may be one way to manage the uncertainty, and perhaps achieve greater savings. Once enrolled, beneficiaries would not be able to cross over freely into another plan. Each plan would receive a fixed, *per capita* payment that would be independent of use of services, and each plan would assume at least part of the financial risk or gain from providing services. The term "capitation" embraces both this notion of defining the population through a closed enrollment and the idea of paying by the person for health care rather than paying for each health care service. Through capitation, plans would operate under strong incentives to economize on the use of health care services.

Who would be responsible for operating health care plans based on a capitation strategy? This chapter discusses two options. One would superimpose a closed enrollment on the CHAMPUS Reform Initiative (CRI Capitation). The second would assign direct care and CHAMPUS funds to local military medical commanders, making them alone responsible for providing care to all enrolled beneficiaries in their catchment areas (Catchment Area Management). This chapter turns to each of these approaches after elaborating on the capitation strategy.

THE CAPITATION STRATEGY

Capitation has become an increasingly popular strategy for containing the costs of health care. Under capitation, an organized health care plan assumes a contractual responsibility to provide or assure delivery of a stated range of health services to a defined population, in return for a fixed amount per beneficiary. Because the enrollee is the basis for payment, the prepaid group plan knows the number of beneficiaries and can plan the facilities and personnel needed to provide care. Since the amount paid does not depend on the services used, there is no financial incentive to increase the number of services or to provide particularly costly care. And since the health care payer (either a private employer or the government) sets the capitation payment prospectively, the health care provider cannot influence the revenue received for beneficiaries' care within the period of the contract.1/ A danger, however, is that capitation might promote poorer quality of care; in an effort to economize on care, health care plans might "cut corners" to save money.

Health maintenance organizations (HMOs) are the most familiar form of health care funded by capitation, with some 19 million Americans enrolled in one as of 1985. HMOs appear in a variety of guises. Some directly employ salaried physicians and own their hospitals; others contract for physicians' services, or work out special agreements with affiliated hospitals. However, all capitation plans share three principles: they serve a defined population; they receive a fixed payment that is independent of use of services; and they assume at least part of the financial risk or gain from providing services.2/

In 1975, a comprehensive study of the military health care system by three federal agencies endorsed a capitation strategy. It made these recommendations:

---

1. See Office of Technology Assessment, *Payment for Physician Services: Strategies for Medicare* (February 1986), pp. 180-183. For a fuller discussion of capitation payment systems, also see Congressional Budget Office, *Physician Reimbursement Under Medicare: Options for Change* (April 1986).

2. David Whipple, "Incentives and Organization Structure in HMOs," in Richard Scheffler, ed., *Advances in Health Economics and Health Services Research*, vol. 2 (Greenwich, Conn.: JAI Press, 1981).

- Planning for health care delivery should be based primarily on the size and demographic characteristics of the population to be served;
- Budgeting should be done on a capitation basis;
- Funds for the direct care system and for CHAMPUS should be integrated; and
- Costs per beneficiary should be developed and used as a measure of efficiency and performance.3/

Effects of Capitation

In practice, prepaid group plans save money largely by reducing the rate of hospital admission. An extensive literature shows that HMOs have admission rates about 40 percent lower than conventional insurance plans: the typical HMO may have about 450 hospital days per thousand beneficiaries. Moreover, empirical evidence has not borne out the fear that HMOs sacrifice quality of care to realize these lower admission rates.4/

HMOs have less clear-cut incentives to curb outpatient use. On the one hand, they may encourage outpatient visits if these can prevent, or substitute for, more expensive inpatient care. That is one reason HMO outpatients have low or no out-of-pocket costs.5/ On the other hand, the capitation payment gives HMOs a strong incentive to reduce use of all services.

---

3. Department of Defense, Department of Health, Education, and Welfare, Office of Management and Budget, *Report of the Military Health Care Study* (December 1975). The Congress, in its defense authorization for fiscal year 1987, required the Secretary of Defense to begin a program of enrollment.

4. See Kathryn Langwell and James Hadley, "Capitation and the Medicare Program: History, Issues and Evidence," *Health Care Financing Review: 1986 Annual Supplement* (December 1986).

5. Too easy access to outpatient care may simply create demand for new services. For instance, outpatient clinics that offer low-priced minor surgery have greatly increased the demand for procedures such as knee surgery and the removal of noncancerous growths. Regina Herzlinger, "Corporate America's 'Mission Impossible': Containing Health-Care Costs," *Technology Review*, vol. 88 (November/December 1985), p. 44.

COMBINING CRI WITH CAPITATION

The CHAMPUS Reform Initiative offers one vehicle for employing a capitation strategy. It could work as follows. During an open season, beneficiaries would choose between a plan run by and centered around the nearest military medical installation, and one run by a private carrier that offered conventional CHAMPUS and the new CHAMPUS Prime benefits.6/ Keeping enrollment voluntary would satisfy the needs of beneficiaries for some freedom of choice. Of course, beneficiaries could decide not to enroll at all.

Each military treatment facility (MTF), having registered a fixed number of beneficiaries from within its catchment area (perhaps up to some specified limit), would receive funds to provide or arrange for all of the care of its enrolled population.7/ The idea is that military facility managers would be able to spend their funds wisely if given enough flexibility and incentives (as discussed below). They could hire civilian staff to enhance their in-house capabilities, or set up satellite clinics run by either military personnel or civilians, or sign contracts with local PPOs or HMOs. CRI carriers would also assume financial risk for services to those who enrolled in their plans, and offer them a choice of conventional CHAMPUS or CHAMPUS Prime. The key distinctions between this approach and the Administration's version of CRI would be (1) firm knowledge of the numbers of beneficiaries, and (2) strong incentives for military health care providers as well as civilians to reduce use of medical services by beneficiaries.

---

6. Beneficiaries who are eligible for Medicare form a special case because they are not entitled to CHAMPUS benefits. Their choice would lie between joining the MTF's plan or staying with Medicare, unless the law was changed to permit them to use CHAMPUS. One possibility would be to qualify the plan run by the private carrier as a Medicare plan (as currently are several dozen HMOs), so that it would receive payments from Medicare to cover the health care costs of each enrolled beneficiary. The Congress might also choose to make the plan run by the MTF a qualified Medicare provider, thus helping the Defense Department defray the expenses of peacetime care.

7. This option would also need an internal pricing scheme for patient referrals within the direct care system. Large military treatment facilities in particular treat a sizable proportion of patients from outside their respective catchment areas, referred by other military facilities. The pricing scheme should presumably encourage medical commanders to refer patients within the system when doing so is cost-effective.

Issues in Designing CRI Capitation

Superimposing capitation on CRI poses three difficult design issues that the Defense Department and the Congress would have to resolve: how to set payments per beneficiary; whether to share risks; and how to assure managerial flexibility for the military.

Deciding the Fixed Payment. A central issue under capitation is the appropriate base price, or average payment per beneficiary. The level of payment must be high enough to encourage competition, but not so high as to dilute incentives for cost containment. The Medicare program, for example, lets its current expenses set the level of payment for beneficiaries who join a specified HMO. It makes payments for each enrollee equal to 95 percent of its adjusted average per capita costs (the AAPCC), an actuarial measure of the costs that Medicare would have incurred if the plan's enrollees had received services from fee-for-service providers in the same community. Another alternative is to arrive at an appropriate average through a process of competitive bidding. Potential CRI carriers would themselves quote base prices for serving the Defense Department's beneficiaries.8/

The capitated payment should reflect differences in beneficiaries' health status and their potential use of resources. If a CRI carrier attracted disproportionately many healthy beneficiaries (an example of biased selection), it would enjoy a "windfall" if its fixed payment was merely the average for all beneficiaries. Conversely, a CRI carrier that enrolled disproportionately many sickly members would soon fold if its capitated payment was too low. Medicare, for instance, uses age, sex, welfare status, and institutional status to vary its AAPCC rates.9/

Biased selection may not be a problem in the military. Health prospects--as measured by age, disability status, and self-reported health--do not significantly influence the outpatient choices of mili-

---

8. Leonard Gruenberg, Stanley Wallack, and Christopher Tompkins, "Pricing Strategies for Capitated Delivery Systems," *Health Care Financing Review: 1986 Annual Supplement* (December 1986).

9. Since AAPCC is a relatively poor predictor of individual use, analysts are searching for additional ways to adjust Medicare's formula, using such variables as patients' previous-year use of medical services and their perceived health status. Joseph Newhouse, "Rate Adjusters for Medicare Under Capitation," *Health Care Financing Review: 1986 Annual Supplement* (December 1986).

tary families, according to the statistical model discussed earlier. Put another way, the typical military-reliant family (which might be likely to enroll with the MTF) may be apt to use neither more nor less medical care than the typical civilian-preference family (which might be likely to enroll with the CRI carrier).10/

Apportioning the Risk. The difficulty of setting fixed prices precisely would make it attractive for the Defense Department and CRI carriers to agree to share risk. Such "partial" capitation would offer several advantages. First, the Defense Department might stand to keep a greater percentage of any savings generated by the CRI carriers. Second, partial capitation might encourage more private firms to bid for a contract, since otherwise potential losses could be quite high. Finally, partial capitation would give providers greater leeway to provide adequate quality of care while still controlling costs.

One way to share risks would be to deal directly with the carriers' aggregate cost experience. The Defense Department could limit each carrier's savings or losses according to a specified risk formula. By way of example, the Texas Medicaid program--which contracts with a private firm to provide acute care services to its beneficiaries--shares excess costs of up to 9 percent of the contract price, with the contractor at risk for 15 percent and the state for 85 percent. Beyond 9 percent the state assumes all costs. Though the private sector's risks are limited, analysts believe that the Texas contractor has enough motivation to control costs.11/ Another strategy would be to define risk-sharing on an individual enrollee basis; for instance, carriers could receive a reduced amount per patient prospectively, and a portion of all other treatment costs retrospectively.

---

10. The Defense Department's 1984 beneficiary survey asked families to rate each member's overall health as excellent, very good, good, fair, or poor. In three out of four retired families, no one was reported to be in fair or poor health; among the remaining families, one-third reported that more than half of their members were in fair or poor health. While civilian preference or reliance tended to be highest when proportionally many family members were in fair or poor health, the effect was modest and not statistically significant: when everyone in a retired household is in good to excellent health, the expected probability of civilian preference or reliance is 35 percent. When everyone is in fair to poor health, the expected probability is 42 percent. Active families show a similar pattern.

11. Stanley Wallack and Elizabeth Donovan, "Capitating Physician Services Under Medicare" (Waltham, Mass.: Brandeis Health Policy Research Consortium, January 1985).

Managing the MTF Health Care Plan. Managerial flexibility, accompanied by a substantial decentralization of control over resources, is an essential ingredient of capitation. To deliver care economically, military medical commanders would need to be able to make trade-offs between CHAMPUS and direct care and among the various appropriations categories. But would military medical commanders, operating in a highly stratified, bureaucratic environment and meeting diverse missions, be able to live up to the principles of prepaid group practice? Would this be perhaps even less likely since control over funds for active-duty staff personnel (such as physicians, nurses, technicians) would rest with program managers outside the military medical departments?

To compensate for constraints on active-duty staff personnel, the Defense Department could relieve capitated installations from current limits on numbers of civilian personnel end strengths, as it did in an earlier test of capitation (see Appendix D). Even better, it could also devolve more authority over contracts to local facility managers. Last year's defense authorization gave broad authority to the Secretary of Defense to enter into contracts with HMOs, PPOs, or individual providers or insurers for the delivery of any kind of health care service, using funds previously designated for CHAMPUS. The Congress expressed hope that the Secretary would delegate this contracting authority to the individual service Secretaries to facilitate the most cost-effective use of CHAMPUS funds. They in turn could give their respective commanders the authority to purchase needed health care services.12/

Past experience with capitation shows that local managers would need wide authority over funds from their Operation and Maintenance (O&M) and CHAMPUS appropriations, so that they could make trade-offs between delivering care in-house or in the community. (O&M funds pay most day-to-day operating costs.) For instance, they might need to be able to buy investment equipment items, which

---

12. A Defense Department report suggested that reinforcing the participation of local commanders in the budgeting process might be another way to upgrade their authority. When they submit their facility operating plans, they could also be given the opportunity to request adjustments in key health care skills (physicians, nurses, selected technicians) for *mandatory* consideration by the authorities who control the distribution of personnel. See Office of the Assistant Secretary of Defense (Health Affairs), Capitation Budget Work Group, *Capitation Budgeting Evaluation*, in *Department of Defense Appropriations for 1982: Part 4* (1981) pp. 886-925.

would normally be funded out of the "Other Procurement" appropriation, with money from their O&M accounts. To implement this flexibility, the Defense Department could adapt its Model Installation Graduate program. This program vests installation commanders with broad authority to improve the operation of their facilities by making it easy for them to cut through "red tape" and experiment with new ways to accomplish their missions; installation commanders are freed to purchase goods and services wherever they can get the best combination of cost, quality, and responsiveness. The Model Installation Graduate program's upcoming test of a unified budget at six installations could offer an excellent opportunity to test ways to increase local managerial flexibility.

Good data would be crucial. Military medical managers would need to operate or have ready access to a high-quality data system that tracks beneficiaries, their number, demographics, and health care status. The Defense Enrollment and Eligibility Reporting System (DEERS) should fit the bill with only minor modifications. DEERS is a computer information system that keeps up-to-date records on all active-duty and retired military personnel and their dependents, in order for military treatment facilities to verify patients' eligibility for care. Military managers would also need detailed and timely data on use patterns, patient case-mix, and individual physician practices. They might be able to extract some of this information from the AQCESS system, a computerized hospital information system that supports quality assurance, patient registration, and appointment scheduling, and that interfaces with DEERS. Within a few years, all MTFs will be receiving the Composite Health Care System, an advanced management information system.13/

---

13. A "medical information system" is a computer-based system that receives data normally recorded about patients, creates and maintains from these data a computerized medical record for every patient, and makes data available for patient care, administration, business management, monitoring of quality of care, epidemiological research, and planning of medical care resources. (See Office of Technology Assessment, *Policy Implications of Medical Information Systems*, 1977.) The Defense Department is now in the early phase of a process, expected to take at least three to four years, to acquire such a system (the Composite Health Care System).

Effects on Costs

Capitation alone would not necessarily save money. Like the Administration's proposal, a capitated version of CRI might raise costs if carriers performed poorly or, more important, if beneficiaries shifted substantial amounts of ghost care or dropped any private insurance they have. Indeed, the range of potential costs roughly coincides with the estimates shown in Table 8 of the preceding chapter. But several factors might help to limit use and hold down per capita cost, and so keep the most likely total costs below those of CRI without capitation.

Incentives to Economize. Superimposing capitation on CRI would give all providers of health care, military as well as civilian, an especially strong incentive to reduce use of expensive hospital care. Once they began to operate under a capitated budget, serving a definite population, military medical commanders would be under strong pressure to make the most efficient use of medical resources. Indeed, to reduce rates of hospitalization that (as seen earlier) are now quite high, they would probably want to emulate civilian PPOs in conducting utilization reviews to reduce unnecessary use of services (as well as to make sure that quality of care was kept high). Some necessary computer software is now under development, specifically a "precertification module" that will screen hospital admissions against specified criteria, and a "utilization reminder" that will notify hospital staff that an individual patient is approaching a selected length of stay for his or her diagnosis-related group.14/ The savings from lessened use of hospitals could benefit other areas of patient care, or enhance medical readiness, or flow back to the Treasury. (Since the carrot is as important as the stick, the Defense Department might want to let individual installations hold onto some of their savings and use them to meet unbudgeted needs, as is allowed in the Model Installations program.)

Lessened Uncertainty. Capitation would greatly lessen, though not eliminate, the uncertainty facing potential bidders under CRI. Having a defined beneficiary population--and therefore information about beneficiaries' past use of health care and other insurance cover-

---

14. These developments are part of a larger effort to build a DRG system for military treatment facilities. See Office of the Assistant Secretary of Defense (Health Affairs), *A Report to the Congress on the Allocation of Resources Using Diagnosis Related Groups* (June 1987).

age--would give private carriers a much better idea of what to expect in patient loads, which would be an enormous help in planning for facilities and staff. The phenomenon of ghost care might still be a problem: so long as beneficiaries did not have to pay premiums, some people might casually enroll without any initial intention of using the plan regularly. However, the risk-sharing mechanisms would protect against egregious losses from fluctuations in use caused by unexpected shifts in ghost care. Whereas few private firms offered bids on the Administration's proposal for CRI, a capitated version should stimulate greater competition--and the more bidders there are, the stronger the Defense Department's hand in negotiating contracts.

Better PPO Agreements. Finally, having a defined, enrolled population might help carriers in signing agreements with preferred providers. The reason PPOs offer discounts is to get a guaranteed volume of patients. Faced with an amorphous beneficiary population, they might balk at signing agreements, or offer comparatively small discounts. A carrier that could point to a fixed number of beneficiaries might wield greater clout in the medical marketplace. What is more, local civilian hospitals might be better able to take advantage of a known patient base to plan their staff needs accordingly, and thus provide more services to military beneficiaries.15/

Effects on Workload

How would this plan affect workloads in military facilities? The overarching uncertainty is, who would join which plan? If too few nonactive beneficiaries were to enroll with the military, available capacity and personnel would go to waste, possibly harming wartime readiness. Having too many enrollees, by contrast, might overwhelm local managers and cause the quality of care to suffer. Moreover, private firms might decline to compete for contracts that enrolled comparatively few beneficiaries.

---

15. Local community hospitals in some areas today would like to provide more services, but cannot plan accordingly. For example, the director of a hospital located near Camp Lejeune testified: "Not only do we have the facilities and staff to provide quality care, we take great satisfaction in providing this service. The problem we face is not knowing from year to year what to expect in terms of patient load. . . if we had a base to work from, staffing could be stabilized." (Testimony before the House Committee on Armed Services, Camp Lejeune, N.C., June 24, 1987.)

Only an actual test will reveal how many would join. But current patterns of outpatient use may serve as a guide to eventual enrollment under CRI Capitation. Beneficiaries who get most of their health care directly--the members of military-reliant and military-preference families--might be most likely to enroll with a plan centered around a military hospital. Civilian-preference families, and perhaps civilian-reliant ones as well, might be more likely to enroll with the private CRI carrier.

Under these assumptions, an estimated 5 million beneficiaries would enroll under the military's health care plans--including all active-duty personnel and all dependents and retirees who are members of military-reliant and military-preference households located inside catchment areas. Up to another 2 million or so nonactive beneficiaries would enroll with the CRI carriers--military-reliant and military-preference families that live outside catchment areas, and civilian-preference and civilian-reliant families.

Direct Care Patient Loads. A simulation summarized in Table 10 suggests how an enrollment level of 5 million beneficiaries might affect the workload in military treatment facilities. The simulation featured differing assumptions about the amount of ghost care shifted to the military, and about reductions achieved in the overall rate of hospital admissions. The first assumption recognizes the critical importance of beneficiaries' reactions, as discussed earlier. The second assumption recognizes that since capitation provides incentives to economize, military health care providers might modify their medical practices to supply less inpatient care (specifically, a 10 percent decrease in admissions). No specific assumption was made about outpatient care.

Assuming no change in military medical practices, CRI capitation could raise surgical admissions by as little as 7 percent or as much as 13 percent--the more ghost care that is shifted, the greater the increase.16/ Indeed, ghost care could also raise admissions of nonsurgical patients by up to 8 percent. To handle these increased admis-

---

16. For example, the 7 percent estimate assumes that military hospitals would lose roughly 13,000 annual admissions from members of civilian-preference families and families living outside catchment areas. They could potentially gain about 24,000 admissions from CHAMPUS comprising members of military-reliant and military-preference families that live inside catchment areas.

sions, military medical commanders might be able to divert staff and resources from the outpatient arena, as estimated numbers of outpatient visits went down by 4 to 8 percent. Military commanders might also have to hire or sign contracts with additional personnel.

Changes in military medical practices could bar any rise in inpatient workloads. If enrolled families did not shift ghost care,

TABLE 10. SIMULATED CHANGES IN NONACTIVE PATIENT WORKLOADS UNDER A CHAMPUS REFORM INITIATIVE (CRI) CAPITATION a/

Type of Workload	Baseline Workloads (In thousands) b/	Percent Change		
		No Ghosts c/	Some Ghosts d/	All Ghosts e/
Present Rates of Use				
Medical	194.4	0	2	8
Surgical	114.1	7	8	13
Visits f/	21,000	-8	-7	-4
Reduced Rates of Use g/				
Medical	194.4	-10	-8	-3
Surgical	114.1	-4	-2	2
Visits f/	21,000	-8	-7	-4

SOURCE: Congressional Budget Office simulations based on data from the 1984 Military Health Care Survey.

a. All military-reliant and military-preference families living inside catchment areas were assumed to join the military treatment facility's (MTF's) health care plan.

b. Direct care nonactive patient loads are based on service-specific data from fiscal year 1985 adjusted for overall change in 1986.

c. Assumes MTF enrollees make no change in the amount of ghost care they receive.

d. Assumes ghost care that would not have been funded by private insurance or Medicare shifts to the MTF, in proportions based on weighted responses to the 1984 Beneficiary Survey.

e. Assumes all non-Medicare ghost care shifts to the MTF.

f. Nonpsychiatric outpatient visits.

g. Assumes military health care providers reduce rates of hospital admission by 10 percent.

surgical admissions in military hospitals might fall by 4 percent and nonsurgical, medical admissions by 10 percent. Only if all ghost care shifted to the military would the services be able to avert a decline in surgical workloads.

Readiness Concerns. In sum, CRI with capitation might be capable of helping wartime readiness by modestly increasing surgical workloads. Perhaps more important, however, dramatic declines in workload that would leave many idle surgeons and operating rooms do not seem likely. Any decline that did occur would probably result from conscious efforts by military health care providers to curtail the use of inpatient services. Diverting some of the resulting savings to readiness-related items (such as medical systems that the services could quickly deploy overseas) might be a more economical use of resources than maintaining a comparatively high per capita rate of hospital admissions.

Potential Drawbacks to Capitation in the Military

Capitating beneficiaries through a closed enrollment would not remedy all the problems of military health care. Not only would there be some risk of compromising the quality of care, but capitation might also worsen the system's managerial difficulties. The Administration has argued that closed enrollment would increase costs substantially because it would fail to use effectively the total resources of the system (as well as restricting beneficiaries' freedom of choice). Put another way, closed enrollment might fail to bring about an optimal balance between direct care and CHAMPUS. For instance, if an enrollee of a carrier's plan needed surgery, it would have to be provided in a civilian setting even if the military facility had idle capacity. Carriers would receive payment for work for which military facilities, equipment, and personnel might already be available at slight marginal cost. That said, nothing would prevent private carriers and local military medical commanders from working together to pool selected assets, just as the Administration expects under its version of CRI. Military hospitals could make excess capacity available at some cost to enrollees of the private carriers; carriers in turn could offer selected services to enrollees of the MTF. There is no guarantee, however, that the working relationship between the military and civilian sectors would be as close as is spelled out in the Department's request for CRI proposals.

The advantage to an organization of having a defined population to serve is that facilities and staff can be matched to that population.17/ But if enrollments fluctuated--as would be quite possible in the early years as members tested the waters--political, institutional, and budgetary obstacles might make it difficult for military health plans to respond appropriately. Unlike their private counterparts, military managers cannot close facilities without worrying about the effects on the local community and, perhaps more important, on overall wartime capability. How could the services compete fairly with private carriers for enrollees when, in addition to providing peacetime care, they must also meet their readiness missions?

Moreover, by vesting enormous importance in a small number of large organizations, this strategy might cause problems down the road when the time arrived to renegotiate contracts. Early carriers might use their market power to eliminate potential competitors for future CRI awards. And the government might be exceedingly reluctant to cancel a contract that covered hundreds of thousands of military families for fear of creating excessive turbulence. Shifting among carriers could cause a great deal of confusion, especially if the new carrier set up an entirely different network of preferred providers. These same problems beset the Administration's version of CRI.

Indeed, an essential element of CRI with or without capitation is reliance on a few large private carriers. The difficulty is that a program in which decisions are made and priorities set in relatively small regions may be vastly superior to one in which a single plan with inflexible norms is established for areas as large and diverse as a multistate region.18/ For most hospital services, the market area is limited to the immediate vicinity of the place where the care is received, so that state, county, or municipal boundaries may contain several dis-

---

17. Office of Technology Assessment, *Payment for Physician Services: Strategies for Medicare* (February 1986).

18. Andrew Sorensen and Ernest Saward, "An Alternate Approach to Hospital Cost Control: The Rochester Project," *Public Health Reports*, vol. 93, no. 4 (July-August 1978).

tinct hospital-market areas.19/ If no one knows market conditions better than the local military medical commander, why rely at all on a large private health care organization? This question lies behind the next alternative to be examined: a decentralized strategy that would "manage by catchment area."

CATCHMENT AREA MANAGEMENT

A catchment area management would make military medical commanders exclusively responsible for providing health care to all enrolled beneficiaries in their respective catchment areas. Instead of two health plans in a given catchment area--one run by a private carrier, the other by the local military medical commander--there would be a single military-based plan. Beneficiaries could elect (or in some instances would be required) to join the military-sponsored health care plan, with those preferring not to enroll retaining eligibility only for conventional CHAMPUS benefits. Local military medical managers would have wide authority to deliver care as they saw fit. They could decide to build up their in-house capabilities--presumably in clinical areas with heavy demands and sizable CHAMPUS unit costs--or to contract out selected services to local PPOs and HMOs. Further economies could come from stringent utilization reviews, either managed in-house or contracted out to a specialized firm.

Putting all responsibility in the hands of MTF commanders would amplify the importance of managerial flexibility. Unless they were given broad contract authority, wide control over the various appropriations accounts, and good data (as discussed above), management by catchment area would probably fail. Yet even if the Defense Department relinquished its managerial authority, questions of implementation would remain. Would the MTFs be able to acquire--or hire--expertise in actuarial estimation and cost analysis, and find the added personnel needed to manage these new activities? 20/ Not all

---

19. John Wennberg, "Should the Cost of Insurance Reflect the Cost of Use in Local Hospital Markets?" *New England Journal of Medicine*, vol. 30, no. 22 (November 25, 1982).

20. A concern raised by the RAND Corporation.

military medical commanders would be prepared to deal with the upheavals triggered by moving to catchment area management.

The early success of the Air Force's Health Care Finder Program suggests that, with support from their parent services, military managers can adapt. This program, begun last year, encourages medical commanders to set up their own provider networks, linking other government facilities or civilian physicians.21/ Military commanders at nine Air Force bases offered local civilian health care providers the following arrangement: if they would accept CHAMPUS payments in full (that is, accept assignment) and undergo a quality-assurance screening, the military treatment facility would show their names to patients, make appointments for them if they desired, and handle the paperwork to assure prompt payment of CHAMPUS claims. Early success in signing up physicians--hundreds were canvassed and dozens have already signed agreements--persuaded the Air Force to expand the Health Care Finder Program nationwide, beginning in the summer of 1987. To be sure, managing by catchment area would present much greater challenges than running a health care finder. Nonetheless, Air Force commanders have shown an ability to acquire expertise in new areas.

Effects on Costs and Workload

Fundamentally, managing by catchment area should produce results similar to those under CRI with capitation, since local managers would have the same incentives and potential for achieving savings.

Compared with capitation under CRI, however, managing by catchment area would have modestly less potential for savings and less risk of added costs, the chief reason being that two nonactive beneficiaries in ten live outside the boundaries of a catchment area, and thus would be largely untouched by this option. Still, people living inside catchment areas initiate more than 90 percent of the direct hospital admissions and more than 50 percent of the CHAMPUS hospital admissions recorded by nonactive-duty benefi-

---

21. Participating Air Force bases were Patrick and Tyndall (Florida), Tinker (Oklahoma), Reese (Texas), Luke (Arizona), Nellis (Nevada), Little Rock (Arkansas), Castle (California), and the Air Force Academy (Colorado).

ciaries. Just as under the preceding option, military medical managers would have strong incentive to control this activity, and hence contain costs.

Size and Location. One other constraint on potential savings bears mention. Because this option would place unique reliance on military medical commanders, it might not be feasible in all catchment areas. In small military hospitals, for instance, the existing physical plant is an obstacle to expanding clinical capabilities. Also, MTFs located in areas with a shortage of civilian health care might be unable to supplement their direct care services at an economical price, because of difficulties in attracting new civilian employees or signing favorable PPO agreements.

Because differences in location and size are related to present patterns of outpatient care (Table 11), small MTFs in remote locations might face special difficulties under catchment area enrollment. (Such areas might also be inhospitable venues for civilian carriers under CRI.) Among families living in such catchment areas, about one out of five prefers civilian to military sources of health care. If these civilian-preference and civilian-reliant families joined their local military health care plan, and shifted their ghost care, the resulting surge in patient loads could overwhelm the small MTFs.22/

The fact remains that few small MTFs serve places with limited civilian capacity, and excluding these from a reform would have have little effect on costs. By the criteria used here, at least 17 small facilities serve catchment areas that are relatively short of civilian health care.23/ Together these 17 catchment areas contain just 5 percent of

---

22. Among the 57 catchment areas that do not overlap with other catchment areas, military reliance is generally lowest in areas with plenty of civilian hospital care, regardless of MTF size. Though an enrollment might therefore draw in a great deal of ghost care, medical commanders in such areas should be able to capitalize on local civilian resources to provide all needed health care. Dependence on military facilities is highest in locations with large MTFs and sparse civilian capacity. The low degree of civilian reliance points to relatively little change in direct patient loads under a military enrollment; commanders of these MTFs therefore would not have to arrange for very much supplemental civilian care.

23. A military treatment facility is defined as small if its available bed capacity is under 100. The amount of civilian resources is defined by the relative availability of acute-care beds in commercial or nonprofit hospitals; so-called shortage areas offer comparatively few civilian

(Continued)

TABLE 11. OUTPATIENT CARE PREFERENCES IN RELATION TO CHARACTERISTICS OF LOCAL TREATMENT FACILITIES (In percent)

	Outpatient Care Preferences of Military Families a/				
Local Characteristics	Military-Reliant	Military Preference	Civilian Preference	Civilian-Reliant	No Use
Ample Civilian Care b/					
Small MTF c/	24	39	26	8	2
Large MTF	26	36	26	9	2
All MTF	25	37	26	9	2
Scarce Civilian Care					
Small MTF c/	33	42	16	5	4
Large MTF	43	43	9	2	3
All MTF	41	43	11	3	3

SOURCE: Congressional Budget Office calculations based on data from the 1984 Military Health Care Survey.

a. Based on weighted sample from the 1984 survey of active-duty and retired and survivor families living in catchment areas that do not overlap with other catchment areas; unweighted sample size is 1,400.

b. Catchment areas with relatively high numbers of acute-care beds available in private civilian hospitals.

c. Catchment areas served by a military hospital (MTF) with a normal bed capacity under 100.

the Defense Department's nonactive beneficiaries, hold only 3 percent of the military's operating beds, and generate only 7 percent of CHAMPUS's hospital days for nonpsychiatric care.

Readiness Concerns. Depending on the degree of enrollment, managing by catchment area might spur a rise in hospital surgery and so help wartime readiness. Yet this strategy could also raise a contrary risk of fragmentation. Readiness could suffer if the local emphasis on peacetime care came into conflict with the services' overall goal of wartime preparedness. What would happen, for example, if an MTF

---

23. Continued

hospital beds in relation to the nonpsychiatric, average daily patient load of nonactive military inpatients. Data on civilian beds and workloads come from the AHA 1983 survey of hospitals. The measure used here relates available civilian beds (85 percent of total acute-care beds in a catchment area less the average daily civilian patient load) to the average daily number of nonpsychiatric days spent by nonactive patients in the local military treatment facility. An area is arbitrarily judged short if the ratio of civilian beds to direct inpatient days is under 2.5. The average ratio for the 57 catchment areas that do not overlap othercatchment areas is about 10 beds.

commander chose a peacetime mix of staff and activity that would not fully support readiness training? 24/ To avoid this dilemma, the central medical departments would have to walk a fine line between monitoring local activities and violating the conditions of decentralized management.

The Special Problem of Overlapping Catchment Areas

Managing by catchment area would raise special problems for military hospitals located close together. Roughly one nonactive beneficiary in four lives in a catchment area that overlaps extensively with another. Of 12 such overlapping areas, the three with the largest nonactive-duty populations are metropolitan Washington, D. C. (site of Walter Reed Army Medical Center, Dewitt Army Hospital, Bethesda Naval Medical Center, and Malcolm Grow Air Force Medical Center), the Tidewater area of Virgina (Portsmouth Naval Hospital, McDonald Army Hospital, and the Regional Air Force Hospital at Langley), and San Antonio, Texas (Wilford Hall Air Force Medical Center and Brooke Army Medical Center). Altogether, the 12 overlapping areas are served by 29 military treatment facilities.

Present regulations require a modest amount of coordination among overlapping facilities. An MTF that cannot care for a patient is supposed to check with its neighboring facilities before issuing a nonavailability statement permitting use of CHAMPUS. But because the degree of cross-facility use by beneficiaries is not known, no one can measure the effects of this on individual facility resource requirements. A closed enrollment, though it would settle questions about cross-facility use by predistributing beneficiaries, would still beg a larger question: should each military treatment facility support a separate capitated population, or should they each give up some autonomy to work together as a "minisystem"?

The Defense Department seems headed in the direction of areawide commands. Last year it set up a joint-service medical command in San Antonio, which requires Brooke Army Medical Center and Wilford Hall Air Force Hospital to combine their various medical

---

24. Charles Phelps, Susan Hosek and others, *Health Care in the Military* (Santa Monica, Calif.: RAND, June 1984).

services and medical training programs. Recent plans call for another joint-service command in a broader area encompassing installations in New Jersey, Delaware, and Philadelphia. The affected hospitals and clinics would share medical staffs and budgets, and the services would coordinate their construction plans. More such joint commands may be in the offing since, according to the Assistant Secretary of Defense for Health Affairs, the Secretary of Defense strongly supported the concept and expected the military departments to cooperate in an effort to establish additional joint commands wherever feasible.25/ Joint commands may improve efficiency if they eliminate areas of clinical redundancy, and spur facilities to specialize in what they do best. Moreover, a joint command may relieve the managerial pressures on any one military hospital administrator, thus raising the odds of a successful catchment area management. (Under catchment area management, joint service commands might first be tried in places with high degrees of interservice overlap, then possibly extended over broader areas where military facilities lie further apart.) Evidence from the civilian sector suggests that hospitals can cooperate in this sort of system and still preserve their institutional autonomy.26/

On the other hand, each service needs a system of health care that is designed to meet its unique missions, and staffed by a particular mix of personnel who are armed with proper doctrine and training. Decreased autonomy for individual facilities, if it leads to changes in staffing and training, might prevent local medical commanders from effectively supporting their parent services. (Only three of the twelve areas with a high degree of overlap are served by a single military branch.) What seems to be clinically redundant in peacetime might be integral to the Army's, Navy's, or Air Force's requirements in wartime. In addition, military hospitals in highly overlapping areas may already be operating more efficiently than their counterparts in other

---

25. *Navy Times*, August 17, 1987, p. 18.

26. Under the Hospital Experiment Payment Program, started in 1980 in Rochester, New York, nine area hospitals voluntarily committed themselves to operate under a communitywide cap on revenue. The cap constrained payments for inpatient and outpatient care, though it provided incentives for ambulatory treatment whenever clinically appropriate. Over the first five years of the experiment, the nine hospitals not only cooperated, but held the area's total increase in expenses to 6 percent below the average for all New York hospitals, and 22 percent below the average of all hospitals nationwide. An 8 percent drop in the rate of admission, from 135 per thousand to 124 per thousand, played a large role in containing costs.

areas, if their lower rate of per capita admission is any guide: the median overlapping catchment has 210 direct and CHAMPUS hospital admissions per thousand active-duty dependents, 13 per thousand or 6 percent fewer than the median for other catchment areas.

The debate over centralizing management in overlapping catchment areas must weigh the need for autonomy--carving up overlapping catchment areas into individual "spheres of influence"--against the possible benefits of operating several facilities as a mini-system. It should be feasible, however, for the services to manage by catchment area under either approach.

CHAPTER V

BUILDING ON CURRENT PROGRAMS

Until now this study has discussed major reforms, far-reaching changes that could transform the military and civilian parts of the Defense Department's health care system. What follows is a look at an alternative strategy, that of building on current, small-scale initiatives. In recent years, the military services and the Office of CHAMPUS both have started programs to improve health care services and contain costs. Among them are civilian-run outpatient clinics (PRIMUS in the Army, NAVCARE in the Navy), fixed-price contracts for mental health care (CHAMPUS's Contractor Provider Arrangement in the Tidewater area of Virginia), and special agreements with nonmilitary health care providers (for example, the Army's Fort Drum Demonstration Project, and various resource-sharing agreements with the Veterans Administration).

As one option for building on these initiatives, the Defense Department could adopt a three-pronged approach:

- Put civilian-run outpatient clinics in all large catchment areas;
- Set up contracts for mental health services in catchment areas with high CHAMPUS costs; and
- Realign medical assets at installations served by small military hospitals by contracting out inpatient services.

These are comparatively practical initiatives that could achieve results in reasonably short time. A fourth initiative could be added to them: increased cost sharing. Modest fees for direct outpatient care, for instance, would help finance an expansion of direct care capability. This chapter looks at each of the four initiatives in turn.

CIVILIAN-RUN OUTPATIENT CLINICS

Since 1986 the Army has set up four civilian-run outpatient clinics, operated under contract with a private corporation. Three serve the Washington, D.C., area; the other serves Savannah, Georgia. These "PRIMUS" clinics (Primary Medical Care for the Uniformed Services) provide a wide range of free outpatient services to nonactive-duty beneficiaries, including some preventive benefits not available under CHAMPUS (such as physicals, PAP tests, mammograms). The Navy, too, has civilian-run clinics: four NAVCARE clinics that are similar in concept to PRIMUS, though different in some details.

Current plans, though subject to Congressional action, call for considerable expansion. The Army wants to set up 10 more and the Navy 11 more PRIMUS clinics around the country over the next two years; the Air Force also plans to open 5 PRIMUS clinics. Most are slated for catchment areas served by relatively large military treatment facilities (operating more than 100 available beds). Even so, about 28 such catchment areas would be lacking a civilian-run clinic come 1989. And some areas would only have one clinic, while others would have two or three. Thus, the services have ample room to expand the numbers of PRIMUS or PRIMUS-type clinics.

What effects will expanding these clinics have on the delivery of health care? Will they raise or lower spending? The first year's experience of the Army's earliest PRIMUS clinic in Fairfax, Virginia, may hold some tentative answers. To be sure, metropolitan Washington, with its preponderance of officers and concentration of health care facilities, may not offer the best indication of results elsewhere. On the other hand, when it comes to patterns of outpatient care, dependents of active-duty personnel in metropolitan Washington are not too unlike dependents in other catchment areas.1/ The available data suggest that PRIMUS clinics could enhance beneficiaries' satisfaction, but might also increase total costs because of a rise in the demand for military health care.

---

1. Inside Washington catchment areas, 44 percent of active-duty military families are military-reliant, 45 percent are military-preference, 10 percent are civilian-preference or civilian-reliant, and 1 percent are not classifiable (based on weighted proportions from the 1984 Health Care Survey). In all other catchment areas taken together, the equivalent proportions are 47 percent, 39 percent, 11 percent, and 3 percent.

Background on the Fairfax Primus

The first PRIMUS clinic opened at the beginning of fiscal year 1986 in Fairfax, Virginia, several miles from the Army hospital at Fort Belvoir. In its first year, the clinic handled over 70,000 visits, the vast majority (51,000) from dependents of active-duty personnel who lived near Fort Belvoir or the Bethesda Naval Medical Center.

Though administered by the Army, the PRIMUS clinic attracted beneficiaries from all the services. About four nonactive users in ten were from Army families, three in ten from Navy and Marine Corps families, and three in ten from Air Force families. Whatever their service backgrounds, most PRIMUS users were from officers' families. The estimated proportion among dependents of active-duty personnel, based on a sample of PRIMUS records, is about 85 percent; in contrast, members of officers' families make up only 56 percent of the active-duty dependent population in the catchment areas around Fort Belvoir and Bethesda.[2] (Three out of four visits by retired military personnel and their dependents were also from officers' families.) Also notable was the number of children. Nonactive dependents under the age of 18, though only about one-third of the nonactive population, generated about half of the 70,000 PRIMUS visits.

Preventive services, largely unavailable under CHAMPUS, made up a significant part of PRIMUS's workload. About one visitor in five sought a physical exam, an immunization, or a PAP test. The rest received a range of medical care, including gynecological, cardiovascular, respiratory, and emergency care.

Cost of PRIMUS

The contract governing Fairfax PRIMUS set a fixed price per clinic visit. Each visit up to the first 16,000 cost the Army about $55, regardless of the reason for the visit; each visit beyond 16,000 cost about $48. Thus, the cost of visits as a whole averaged out to roughly $50. (Undoubtedly, some complicated visits cost the private contractor more than $50, while others cost less.) Subsequent contracts for other PRIMUS clinics have used a similar pricing arrangement.3/

---

[2] The preponderance of officers' dependents is probably a result of the Army's decision to place its first clinic in a relatively affluent area of Virginia. Whether future clinics attract a more representative cross-section of beneficiaries will depend heavily on their location. Another possibility, admittedly speculative, is that differences in labor force participation between the spouses of officers and enlisted personnel bias PRIMUS in favor of officers' dependents. Perhaps officers' spouses are less likely to work, giving them more free time to wait for examinations (PRIMUS clinics do not make appointments); or perhaps those who do work are more likely than the spouses of enlisted personnel to have jobs that pay for short-term absences.

PRIMUS costs for pediatric visits--which accounted for about half the visits--were higher than those of CHAMPUS. In 1986, the average cost to CHAMPUS for a pediatric visit for a medical problem (that is, not for psychiatric, surgical, or gynecological care) by an active-duty dependent living in the Washington metropolitan area was about $47, or 6 percent less than the average PRIMUS cost; such pediatric visits by dependents of retirees cost CHAMPUS an average of $40, or 20 percent less than the average PRIMUS cost. But for medical visits by adults, the average cost to CHAMPUS was about $66, about 32 percent higher than the average PRIMUS cost.4/

To the extent that PRIMUS draws adults from CHAMPUS, it may therefore be a cost-effective program. Moreover, PRIMUS patients had lower rates of referral to hospital-based specialists (about 4 percent) than patients in military clinics (6 percent to 8 percent). The Army's explanation is that PRIMUS physicians, all of whom must be board-certified and board-eligible, are more experienced and therefore able to do more than the typical general medical officers who staff a military clinic.

Other possible explanations for the low referral rate cast a harsher light on PRIMUS's cost experience. PRIMUS's case mix may have been weighted in favor of healthier patients--not only those 20 percent who sought preventive services, but perhaps the patients who took advantage of PRIMUS's convenience and free cost to check out relatively innocuous problems. Second, PRIMUS physicians may

---

3. Later contracts for other PRIMUS clinics charge roughly $49 a visit, and $6 for an immunization. The Army is considering a change that would distinguish "short" visits (such as a follow-up exam) from longer ones.

4. CHAMPUS costs for the Washington metropolitan area are based on claims submitted by beneficiaries living in the catchment areas around DeWitt Army Hospital, Bethesda Naval Hospital, Walter Reed Army Medical Center, and Malcolm Grow Air Force Medical Center. Medical visits by patients under 16 years of age are classified as pediatric. Comparison of CHAMPUS and PRIMUS costs is necessarily inexact because, on the one hand, PRIMUS supplies some services that beneficiaries cannot get through CHAMPUS and, on the other hand, CHAMPUS avoids paying for visits that fall under the annual deductible.

have treated patients more intensely by encouraging multiple visits, which coincidentally or not would have benefited the contractor.

Effects of PRIMUS on the Demand for Care

These potential drawbacks point to a larger issue: what effect did PRIMUS have on the demand for health care services? A PRIMUS clinic might raise the overall use of military health care for several reasons: because it offers enhanced preventive care benefits not available under CHAMPUS; because it encourages more frequent visits to a doctor, thus raising the per capita use of outpatient services; or because it attracts beneficiaries who previously got care outside the military health care system (ghost care). Statistical analysis points up the importance of this third possibility, since the degree to which families rely on civilian medical providers has been found to decrease when the supply of direct care increases (see Chapter II). PRIMUS certainly expands the direct care system's capability. But if, following some variant of Parkinson's Law, the demand for medical care were to expand to fill the supply available to satisfy it, PRIMUS might increase costs without significantly improving beneficiaries' health.

PRIMUS's Effects. Survey data show that only 7 percent of the early visitors to PRIMUS had previously used CHAMPUS; 78 percent had previously used a military treatment facility.[5] A more detailed look at PRIMUS's effect on the demand for care appears in Table 12. The table compares visits by beneficiaries living in the "PRIMUS area" (the catchment area around Fort Belvoir's DeWitt Army Hospital) with visits by beneficiaries living in a "control area" (the areas around Walter Reed Army Hospital and Malcolm Grow Air Force Hospital).[6]

---

[5] These data were based on a sample of PRIMUS visit information forms for 1986 (n=911); from October through February, patients were asked whether they had been treated in the past year by a CHAMPUS provider, or a Uniformed Services Medical Facility.

[6] Because of problems in the Navy computer systems that record outpatient visits, complete data on Naval military treatment facilities for fiscal year 1986 are not yet available. Thus, Table 12 excludes visits by beneficiaries who are counted as living within the Bethesda catchment area. Because of the high degree of overlap among the various catchment areas in metropolitan Washington, the distribution of beneficiaries is necessarily arbitrary. Generally, beneficiaries are distributed according to their service affiliation and distance from the four MTFs (DeWitt,

(Continued)

TABLE 12. OUTPATIENT VISITS IN THE WASHINGTON, D.C., METROPOLITAN AREA BY NONACTIVE BENEFICIARIES (Army and Air Force Catchment Areas)

	Number of Visits (In thousands)			Change 1984 to 1985		Change 1985 to 1986	
	1984	1985	1986	Number	Percent	Number	Percent
Active-Duty Dependents							
Primus Area a/							
Direct b/	239	226	200	-13	-5.4	-26	-11.5
CHAMPUS c/	39	42	49	3	6.8	7	17.4
Primus d/	0	0	40	0	0.0	40	--
Total	278	268	289	-10	-3.6	21	8.0
Other D.C. e/							
Direct b/	303	303	281	0	0.0	-21	-7.1
CHAMPUS c/	24	27	29	3	12.7	2	7.0
Primus d/	0	0	4	0	0.0	4	--
Total	326	329	314	3	0.9	-15	-4.6
Retirees and Dependents							
Primus Area a/							
Direct b/	240	234	217	-6	-2.4	-17	-7.2
CHAMPUS c/	31	33	33	2	5.5	0	-1.0
Primus d/	0	0	10	0	0.0	10	--
Total	271	267	260	-4	-1.5	-7	-2.5
Other D.C. e/							
Direct b/	527	502	517	-25	-4.8	15	3.0
CHAMPUS c/	32	33	28	1	2.9	-5	-14.8
Primus d/	0	0	2	0	0.0	2	--
Total	560	535	548	-24	-4.4	13	2.4

SOURCE: Congressional Budget Office based on data provided by the U.S. Army and the PHP Corporation.

a. Includes beneficiaries who live in the area around Fort Belvoir's DeWitt Army Hospital.

b. The number of visits reported by the area's military outpatient clinics. Some of these visits may be made by beneficiaries living in a different catchment area.

c. Based on CHAMPUS data compiled by the Defense Medical Support Center; data for 1986 were only 88 percent complete and therefore have been adjusted up.

d. Based on totals reported by the PHP Corporation (the contractor running PRIMUS) and on sample statistics compiled by CBO from PHP's files.

e. Includes beneficiaries who live in the areas around Malcolm Grow Air Force Hospital and Walter Reed Army Medical Center.

In one year's time, the PRIMUS clinic had become a major health care provider for active-duty dependents who lived in the area around Fort Belvoir. These beneficiaries visited PRIMUS 40,000 times during 1986, roughly once for every five visits to a local military clinic. Retirees and their dependents made relatively little use of PRIMUS; only about 5 percent of their direct visits (10,500 out of 228,000) went through the PRIMUS clinic.

The table suggests that PRIMUS helped to raise the total demand for outpatient services in the area around Fort Belvoir. In 1986, the total number of visits in the PRIMUS area by active-duty dependents rose about 8 percent over the previous year's total. By contrast, visits in the PRIMUS area had gone down about 3.6 percent in 1985 (before there was a PRIMUS clinic), and visits in the comparison area during 1986 went down about 4.6 percent. Since only about 20 percent of PRIMUS's patients received preventive care, a large part of the 8 percent increase must have reflected increases in the average number of visits or increases in beneficiaries who previously received ghost care.

The overall increase of 8 percent happened against a backdrop of declining visits in military clinics (down 11.5 percent) and increasing outpatient claims under CHAMPUS (up more than 17 percent). As the survey data suggest, PRIMUS evidently drew many patients from military clinics, and few directly from CHAMPUS. One possibility is that managers of military clinics, knowing that beneficiaries had recourse to PRIMUS, cut down the supply of direct outpatient services. Some beneficiaries therefore turned to CHAMPUS while others--including outpatients who had not yet paid the yearly CHAMPUS deductible and so could not have filed a CHAMPUS claim--went to the PRIMUS clinic.

---

6. Continued

Bethesda, Walter Reed, and Malcolm Grow). For example, an Army beneficiary living within 10 miles of DeWitt Army Hospital is assigned to the DeWitt area, unless he or she lives closer to Walter Reed. If the Army beneficiary lives more than 10 miles away from either DeWitt or Reed, but within 10 miles of Bethesda, he or she is assigned to the Navy facility. Finally, if the beneficiary lives farther than 10 miles from all four facilities, he or she is assigned to the closest Army facility.

Implications

What is the verdict on PRIMUS? The early experience raises two possibilities, with contrary effects on costs. On the one hand, civilian-run clinics can serve as "safety valves" for military medical managers who want to deemphasize direct outpatient care. This could eventually save money since the availability of low-cost care in PRIMUS clinics gives the services the freedom to reallocate staff and resources away from primary care to more challenging inpatient areas, without degrading their hospitals' referral bases. Shifting patients out of military clinics into PRIMUS clinics might not save much (or any) money in the short run, but it might eventually enable military hospitals to treat more inpatients, thereby making less use of relatively expensive inpatient care under CHAMPUS.

On the other hand, a rise in overall use might counter any CHAMPUS savings. By design, free care at a PRIMUS clinic encourages beneficiaries to use the military health care system when they might not do so otherwise, and to use it relatively often. Moreover, since these clinics are not tied to an enrolled population, there is no way to tell whether a rise in total visits, and hence in costs, is medically appropriate.

The early experience with PRIMUS has been mixed. Further experience should provide a better basis for judging its effects. But even if that judgment suggests that PRIMUS increases costs, civilian-run outpatient clinics may still be a useful part of any health care reform, because by expanding the direct care system's capabilities they almost certainly enhance satisfaction among beneficiaries.

SELECTIVE CONTRACTS FOR MENTAL HEALTH CARE

Since military treatment facilities offer little psychiatric care, mental health benefits make up a large part of CHAMPUS's expenses. CHAMPUS spent about $250 million in 1986 for inpatient psychiatric expenses and another $80 million for outpatient services, almost one-fifth of its total spending.

Private health insurance plans often cover mental health in ways different from other types of medical care. Mental disorders may be harder to define than other illnesses, and require treatment for indeterminate periods.7/ Thus, most employer-financed plans stint mental health benefits. For instance, three plans in five limit days of hospital coverage, typically to 30 or 45 days per mental illness, or a maximum of 30 to 60 days per year. Common limits on outpatient mental health care include maximum dollar amounts per year (frequently $1,000), restrictive coinsurance rates (about 50 percent), and limited numbers of sessions.

CHAMPUS too limits mental health coverage. In general, patients cannot spend more than 60 days a year in a hospital for psychiatric care. Outpatients can only use CHAMPUS for a maximum of one hour-long psychotherapy session a day, up to two sessions per week. Despite these limits, increases in the cost of mental health care have continued apace with other costs. Between 1985 and 1986, while CHAMPUS spending on all nonpsychiatric care rose by 22 percent, spending on mental health care also rose by 22 percent.

Selective Contracts

Because it is unique as well as costly, mental health care coverage may be well suited to a selective, fundamental change. One approach, now under test in the Tidewater area of Virginia, is to contract with a preferred provider organization to provide the delivery of comprehensive mental health services--including inpatient care, partial hospitalization, and outpatient care--and all administrative services relating to the delivery of mental health care for CHAMPUS-eligible beneficiaries. The Tidewater area was selected for this "contracted provider arrangement" (CPA) because of its heavy concentration of beneficiaries and relatively high costs.

In fact, mental health care costs are concentrated in relatively few geographic areas. In 1986, catchment areas as a whole generated 78 percent of CHAMPUS's costs for mental health care. About 22 per-

---

7. Allen Blostin, "Mental Health Benefits Financed by Employers," *Monthly Labor Review*, vol. 110, no. 7 (July 1987).

cent of those costs flowed from five areas: San Diego; the Tidewater area of Virginia (which includes three overlapping catchment areas); metropolitan Washington, D.C. (which includes four overlapping catchment areas); and, in California, Long Beach and Camp Pendleton. Over one-third of CHAMPUS's catchment area costs flowed from the top 10 areas; one-half, from the top 20. Thus, by setting up just a few new CPAs, CHAMPUS could affect a large part of its mental health costs.

Effects on Costs

Evidence is not yet in on the Tidewater demonstration. But general experience with PPOs points to a potential for savings of 10 percent to 20 percent, and perhaps more if the CPA greatly reduces the rate of hospitalization. Assuming 20 percent savings, expanding the Tidewater concept to the next four high-cost areas could reduce CHAMPUS expenditures by about $10 million a year; expanding the concept to the top twenty could reduce expenditures more than $20 million.

REALIGNMENT OF MILITARY MEDICAL ASSETS

The services operate dozens of small community hospitals. Many may no longer be practical to operate, because advances in diagnostic and treatment techniques and equipment may have outstripped their ability to provide state-of-the-art care. At the same time, increasing competition among civilian hospitals creates opportunities to strike favorable deals. Why not, then, close small hospitals, or convert them to outpatient facilities, and contract with local hospitals to provide medical care for an area's Defense Department beneficiaries? Likely candidates--facilities with fewer than 100 available beds that were built or last modified before 1980--number at least 48.[8]

---

[8] Between 1975 and 1979, the services converted 14 small hospitals to outpatient clinics--the Army and Air Force because of a shortage of physicians, the Navy because of concerns about cost-effectiveness and declining workloads. See General Accounting Office, *DoD Should Adopt a New Approach to Analyze the Cost Effectiveness of Small Hospitals* (March 15, 1985).

Current Initiatives

Fort Drum. The Army's Fort Drum demonstration shows it is possible for military health care providers, CHAMPUS, and civilian hospitals to work together in such an arrangement. When the Army chose to base the 10th Mountain Division at Fort Drum, the scarcity of construction money ruled out building a small new hospital. Instead, the Army decided to set up a comprehensive health care center for outpatient care, staffing it with active-duty personnel and civilian physicians on part-time contract. For inpatient care, it worked out an agreement with CHAMPUS to send most hospital cases to nearby civilian facilities, where Army physicians would have full privileges (to ensure that they would not entirely lose the ability to deliver hospital care). For their part, the six local hospitals, along with the local medical society, agreed to accept CHAMPUS reimbursements and to bill CHAMPUS directly. Especially complex cases were to go to the Veterans Administration (VA) medical center in nearby Syracuse, or to the Army Hospital at West Point, or to Walter Reed in Washington, D.C.

Sharing with the Veterans Administration. In several instances the services already contract with local Veterans Administration hospitals to provide care to Defense Department beneficiaries.9/ One such case is Kirtland Air Force Base, where, rather than replace a small, aging hospital (built in 1951, that operated only 40 beds), the Air Force decided to staff 40 beds in a nearby 380-bed VA medical center; the base hospital is now used for outpatient care, including same-day surgery. The Air Force is also studying the cost-effectiveness of shifting patients from the small hospital at Davis-Monthan Air Force Base (which operates fewer than 70 of its 90 beds) to the VA medical center in Tucson.

Effects of Closing Small Hospitals

Closing small hospitals, and building on the sorts of initiatives just discussed, would have only a modest effect on costs. The military's 48 small, comparatively old hospitals handle about 9 percent of the

---

9. Statutory authority arises from the Veterans Administration and Defense Department Health Resources Sharing and Emergency Operations Act (Public Law 97-174).

system's days of direct hospital care; beneficiaries in surrounding catchment areas generate about 14 percent of CHAMPUS's days of nonpsychiatric hospital care. Most belong to the Air Force; indeed, one in two Air Force MTFs meets the criteria discussed above for closure as an inpatient facility. (Only one Army hospital in four, and one Navy hospital in six, is small and possibly outmoded.) Thus, the benefits, or disadvantages, of such a strategy would not be spread evenly across the services.

Nonetheless, this option would act favorably on costs in at least two ways. First, it would allow the services to reassign health care personnel to larger facilities, and so operate more beds where the demand for care is greatest. To take an extreme example, suppose all 48 small facilities were completely shut down, and their personnel distributed among the remaining 80 or so military hospitals. On average, the remaining Army and Navy hospitals would enjoy a 4 percent rise in staffing, and the Air Force hospitals a 29 percent rise. The result: several thousand fewer nonavailability statements allowing use of CHAMPUS, and significant CHAMPUS savings. Second, converting small hospitals to outpatient centers would help reduce the $45 million or so CHAMPUS spends on outpatient care in those catchment areas.10/

GREATER USE OF COST SHARING

Charging dependents and retirees for outpatient visits--as has been recommended by the Defense Resources Management Study in 1979 and the President's Private Sector Survey on Cost Control in 1981--would raise revenue that could help finance other initiatives, such as additional PRIMUS clinics. For example, the Defense Department could impose a $5 charge for all nonactive outpatients except dependents of junior enlisted personnel below pay grade E-5 (privates and corporals in the Army) and survivors of deceased personnel--the

---

10. **The GAO estimated that converting three specific hospitals to outpatient clinics in 1981 would have saved $3.9 million, roughly 15 percent of the costs of operating those facilities. This estimate does not include possible savings from transferring military medical staff to larger hospitals. General Accounting Office, *DoD Should Adopt a New Approach to Analyze the Cost Effectiveness of Small Hospitals* (March 15, 1985).**

two excepted groups being the military's least well-off beneficiaries. In addition to raising revenue, such a modest fee would help to cut down the per capita use of outpatient services, perhaps by around 10 percent if the experience of civilian health care plans is any guide. Reductions might translate into reduced waiting lines in military or civilian-run clinics.

The Congress has generally opposed any charges for direct outpatient care, because of concern over the burden on beneficiaries. Most recently, it prohibited an attempt by the Administration to test nominal outpatient charges at two unspecified military installations. At first glance, military personnel probably would see any outpatient charge as an erosion of benefits. Insofar as cost sharing reduces the relative value of military compensation and lowers morale, a $5 fee might chip away at the willingness of service members to stay in the military. But as suggested in Chapter II, beneficiaries might accept cost sharing if it dovetailed with other initiatives that improved the military's ability to provide health care. The rest of this section discusses the effects that cost sharing might have on use, the quality of health, and costs.

Effects of Cost Sharing on Health Care

The debate over cost sharing in the military may be framed by evidence from the civilian sector, particularly the RAND Corporation's "Health Insurance Experiment."11/ The experiment randomly assigned about 3,000 families among several different insurance plans, one offering free care, the others requiring varying amounts of cost sharing. All plans limited out-of-pocket costs to a small percentage of family income.

Use of Services. The heaviest users of medical care were families belonging to the free care plan. Compared with families who had to share 25 percent of costs, they had roughly 25 percent more office visits per capita and a 25 percent higher probability of one or more

---

11. Joseph Newhouse and others, *Some Interim Results from a Controlled Trial of Cost Sharing in Health Insurance* (Santa Monica, Calif.: RAND, January 1982).

hospital admissions.12/ Children as well as adults responded to cost sharing, a finding of special pertinence to the military since about half of active-duty dependents are children. (Only about one-third of the enrollees in the Health Insurance experiment were 13 years old or younger.)13/

Health. Opponents of cost sharing might argue that it is penny-wise and pound-foolish, since it could cause patients to delay receiving care until they have a more serious, perhaps hospitalizable problem.14/ The Health Insurance experiment suggests otherwise, because adults belonging to cost sharing plans were generally no less healthy than people who received free care.15/ Free care did benefit some poorer members of the so-called "high-risk" group, which consisted of people who had specific conditions such as hypertension before they joined the experiment. But free care did not improve the health of the better-off high-risk participants.16/

When applied to emergency room care, cost sharing deterred visits for less serious diagnoses. Health insurance participants who received free care visited emergency departments relatively often, largely for the treatment of less serious problems. Compared with people who shared costs, recipients of free care used emergency departments 30

---

12. Greater use of outpatient services means that physicians are more likely to see illnesses that might lead to a hospital stay.

13. Children receiving free care had 38 percent more episodes of outpatient care than children whose families shared 25 percent of costs. Cost sharing reduced episodes of well-care less than it reduced care-seeking for acute or chronic problems. The only difference between children and adults was that older children (5 years to 13 years old) received similar amounts of hospital care regardless of the insurance plan. See Arleen Leibowitz and others, "Effect of Cost-Sharing on the Use of Medical Services by Children: Interim Results from a Randomized Controlled Trial," *Pediatrics*, vol. 75, no. 5 (May 1985).

14. Ibid.

15. For people aged 14 years or older, RAND used a medical history questionnaire to collect data on general health (physical health and health perceptions) and health habits; medical screening examinations yielded data on blood pressure, cholesterol, and vision. See R.H. Brooks, J.P. Newhouse, and others, "Does Free Care Improve Adults' Health? Results from a Randomized Controlled Trial," *New England Journal of Medicine*, vol. 309, no. 23 (December 1983).

16. In 1984, about 14 percent of all American families had total money incomes under $10,000 a year. Proportionately fewer military families reported such low incomes in the 1984 Military Health Care Survey, with the notable exception of households headed by survivors of retired military personnel: 9 percent of active-duty families (excluding single active-duty personnel), 6 percent of retired households, and 24 percent of survivor households.

percent more often for urgent diagnoses (such as lacerations), but 90 percent more often for less urgent diagnoses (such as abrasions).17/

Effects on Costs

A $5 fee for each outpatient visit, applied to all but junior enlisted personnel below pay grade E-5 and survivors, would when fully implemented bring in revenue of about $85 million a year (see Table 13). These revenue increases would not include savings from reduced use of medical care resulting from the fee. Such savings--which could amount to about $35 million a year--could be used to meet other medical needs, including help for outpatients who now use CHAMPUS. The revenue increases would not include the costs of modifying the services' automated information systems to collect the fee.

The revenues would come out of the pockets of active-duty and retired military personnel, albeit the better-off among them. Moreover, the skewed distribution of medical expenses in any one year would concentrate the burden on comparatively few families: about 18 percent of active-duty families (excluding single active-duty households) and 11 percent of retiree families are responsible for 50 percent of all outpatient visits to military physicians. Therefore some limits on out-of-pocket costs might be necessary to limit the inequities of cost sharing. Limiting families' expenses for direct outpatient care to $100 a year would have a minimal effect on revenues (see Table 13).

CONCLUSION

None of these options by itself--PRIMUS-type clinics, selective contracts for mental health care, realignment of assets out of small hospitals, and increased cost-sharing--would make a major reform in the military health care system. But a balanced approach combining

---

17. Visits for lacerations were the single most frequent diagnosis. The rate of visits for sutured lacerations did not differ for people receiving free care and those sharing costs; unsutured lacerations accounted for all the difference between the free and cost sharing plans for lacerations. See Kevin O'Grady and others, "The Impact of Cost Sharing on Emergency Department Use," *The New England Journal of Medicine*, vol. 313, no. 8 (August 22, 1985).

several of them could make a noticeable difference for the better. Setting up more civilian-run outpatient clinics would enrich the direct-care system's capabilities and therefore improve satisfaction among beneficiaries. Since it might also stir increased demand for military health care services, additional options might be needed that curtail use, such as increased cost sharing and the use of preferred provider organizations for mental health benefits. Some combination of these might serve as an alternative reform if the Congress decided not to proceed with a more comprehensive measure such as the CHAMPUS Reform Initiative.

TABLE 13. ESTIMATED SAVINGS FROM CHARGING NONACTIVE OUTPATIENTS IN MILITARY CLINICS $5.00 A VISIT, EXCEPT SURVIVORS AND DEPENDENTS OF JUNIOR ENLISTED PERSONNEL (In thousands)

		No Limit on Expenses		$100 Family Limit	
Beneficiary Group	Baseline Visits a/	Change in Visits b/	Revenue	Change in Visits c/	Revenue
Dependents of Active-duty Personnel above Pay Grade E-4 d/	7,900	700	35,800	600	34,900
Retirees and Their Dependents	10,600	1,000	48,100	900	47,300
Total	18,500	1,700	84,000	1,500	82,200

SOURCE: Congressional Budget Office.

a. Based on estimated visits to military clinics in the United States in 1986, excluding visits for ancillary purposes.

b. Effects of the $5 fee are based on a "natural experiment," the imposition of a 25 percent copayment in Stanford University's comprehensive medical care plan in 1966. The average price of a visit went from zero to roughly $3.60 in 1968, the equivalent of about $12.90 in 1989, and visits went down by 24 percent. Thus a $5 charge today might lower visits by 9 percent. (This is a conservative assumption because the elasticity of demand for care falls with coinsurance.) See Charles Phelps and Joseph Newhouse, "Effect of Coinsurance: A Multivariate Analysis," *Social Security Bulletin*, no. 35 (July 1972), p. 23. Later experience, including the Health Insurance Experiment, has found similar effects.

c. Assumes that families who would have more than 20 visits a year would not be affected by the outpatient fee.

d. The Defense Department does not break down visits of active-duty dependents by sponsor. Survey data suggest that dependents of enlisted personnel below pay grade E-5 account for between 27 percent and 39 percent of visits by active-duty dependents.

APPENDIXES

APPENDIX A

THE 1984 MILITARY BENEFICIARY HEALTH CARE SURVEY

The Defense Department's Military Beneficiary Health Care Survey provided a wealth of information on active-duty and retired households. Its 91 questions probed general opinions about health care, family use and cost of health care, satisfaction with care received, specific episodes of hospital care and outpatient care, knowledge about programs, and family demographics.

Questionnaires were sent in February 1984 to 19,364 military households worldwide. For sampling purposes, these households were stratified by sponsor's status (active-duty officer, active-duty enlistee with less than five years' service, active-duty enlistee with five or more years' service, retired, or deceased) and by location (catchment areas in the contiguous United States--CONUS--noncatchment areas in CONUS, and overseas). About six households in ten responded overall, with less than average participation among families living overseas and families sponsored by junior enlisted personnel. The stratified random sample that finally emerged appears in Table A-1. (It excludes the 3,000 households belonging to a special subsample of enrollees in CHAMPUS Choice health maintenance organizations.)

In generalizing results to the overall population, the sample observations must be weighted for differences in the probability of selection across stratification groups, and for systematic differences in response rates within and across stratification groups. Using weights developed for the Defense Department, Table A-2 displays the weighted population of military households.1/ It also shows the weighted population of individual beneficiaries, a calculation made possible by questions about individual household members.

---

1. Office of the Assistant Secretary of Defense (Health Affairs), *A Reference Guide to the 1984 Military Health Services System Beneficiary Survey* (Washington, D.C.: Systems Research and Applications Corporation, December 1984).

When arrayed by age and sex, the weighted population from the survey compares fairly well with the actual population counted in fiscal year 1986 (see Table A-3). For example, males under the age of 16 made up 27 percent of the active-duty dependents counted in 1986; they made up 28 percent of the active-duty dependents who belonged to active-duty households in the beneficiary survey. However, among the population of retirees and their dependents, the survey tends to overrepresent men aged 45 to 64 and to underrepresent women aged 65 and over.

TABLE A-1. THE STRATIFIED RANDOM SAMPLE OF BENEFICIARY HOUSEHOLDS FROM THE 1984 MILITARY HEALTH CARE SURVEY

	Location a/					
Sponsor's Status	Overseas b/	CONUS Catchment c/	CONUS Clinic d/	Non-Catchment, No Clinic	Not Certain e/	Total
Officer						
Less than five YOS f/	69	230	13	17	29	359
Five or more YOS f/	358	1,155	88	79	91	1,770
Enlisted						
Less than five YOS f/	318	789	66	81	156	1,410
Five or more YOS f/	401	1,305	132	158	161	2,157
Retired	36	1,163	178	916	9	2,302
Deceased g/	15	982	151	726	5	1,879
All	1,197	5,624	628	1,977	451	9,877

SOURCE: Congressional Budget Office computations from the 1984 Military Health Care Survey.

a. Households classified by their location during October, November, and December 1983 (the period for which they were asked to recall family use of outpatient care), based on their location at the time the survey was initiated and on any changes of residence reported in the survey.

b. Includes households located in Alaska and Hawaii.

c. Includes households in the contiguous United States living inside military treatment facility catchment areas.

d. Includes households living outside a military treatment facility catchment area but within 20 miles of a free-standing military clinic.

e. Includes households that moved from one type of location to another at some time in the last three months of 1983.

f. YOS signifies years of service. The sample excludes enlistees with less than one YOS.

g. Respondents are all "survivors" of military personnel.

TABLE A-2. WEIGHTED SAMPLE OF HOUSEHOLDS AND INDIVIDUAL BENEFICIARIES FROM 1984 MILITARY HEALTH CARE SURVEY (In thousands)

	Location a/					
Sponsor's Status	Overseas	CONUS Catchment	CONUS Clinic	Non-Catchment, No Clinic	Not Certain	Total
			Households b/			
Officer						
Less than five YOS	9.3	34.8	1.7	2.4	4.1	52.3
More than five YOS	40.5	155.3	8.0	7.3	11.5	222.6
Enlisted						
Less than five YOS	224.6	340.2	19.6	32.2	81.7	698.2
More than five YOS	170.7	362.0	21.5	34.1	47.1	635.5
Retired	22.9	906.0	82.0	408.9	5.0	1,424.9
Deceased	0.9	60.7	5.3	24.3	0.2	91.3
All	468.8	1,859.0	138.2	509.2	149.7	3,124.8
			Individuals c/			
Officer						
Less than five YOS	15.6	69.4	3.2	6.7	6.2	1.0
More than five YOS	134.2	529.4	30.3	27.0	36.2	757.1
Enlisted						
Less than five YOS	428.5	679.4	32.9	56.4	147.7	1,345.0
More than five YOS	566.4	1,277.9	77.0	119.5	146.3	2,187.3
Retired	60.2	2,253.7	201.2	976.6	15.0	3,506.6
Deceased	1.1	76.8	7.1	30.5	0.2	115.7
All	1,205.9	4,886.6	351.7	1,216.8	351.5	8,012.5

SOURCE: Congressional Budget Office computations from the 1984 Military Health Care Survey.

a. See Table A-1.

b. Calculated by applying weights to sample observations in Table A-1.

c. Weighted households multiplied by number of family members eligible for military health care (from questions 1a and 1b).

TABLE A-3. AGE-SEX PERCENTAGE DISTRIBUTION OF WEIGHTED SAMPLE BENEFICIARIES COMPARED WITH ACTUALS IN 1986, BY SPONSOR'S STATUS

	Active Dependents		Retirees, Dependents, and Survivors	
Sex and Age	Survey	Actual	Survey	Actual
Males				
0-15	0.276	0.269	0.047	0.052
16-24	0.034	0.035	0.062	0.058
25-44	0.015	0.010	0.046	0.050
45-64	0.001	0.001	0.281	0.243
65 and over	0.000	0.000	0.080	0.099
	0.325	0.316	0.516	0.503
Females				
0-15	0.263	0.261	0.052	0.051
16-24	0.134	0.148	0.059	0.060
25-44	0.263	0.257	0.069	0.074
45-64	0.014	0.016	0.249	0.232
65 and over	0.000	0.002	0.055	0.080
	0.675	0.684	0.484	0.497

SOURCE: Congressional Budget Office computations from the 1984 Military Health Care Survey.

APPENDIX B

ACTUAL AND EXPECTED ADMISSION RATES

As discussed in Chapter II, the per capita use of inpatient services by active-duty dependents varies widely around the country. This appendix extends the analysis of regional variation by mapping the difference in actual admission rates against "expected" rates. Expected rates are obtained from regression equations that control for disparities among catchment areas in demographics and in the supply of care (numbers of operating military and civilian hospital beds, numbers of military physicians, and service affiliation of military hospitals). The expected rates have no clinical significance, but are useful as benchmarks to compare areas.1/

Variables representing the supply of care enter the equations because in the civilian sector such factors (particularly available beds per capita) have a strong statistical association with utilization. Some studies suggest that when communities have relatively more beds, their physicians tend to admit proportionately more patients having conditions for which hospitalization rates are substantially uncorrelated with morbidity.2/ So too in the military; all other things being equal, beneficiaries who live in areas where inpatient services are abundant enter hospitals more often than beneficiaries who live in areas where inpatient services are tight. Because the equations control for bed availability, differences that exist between actual and expected admissions rates might thus reflect the influence of subtle variations in practice styles.

Table B-1 maps the distribution of actual and expected admission rates for surgical and medical care across all catchment areas and in several selected areas. Because of differences in the availability of

---

1. Philip Caper, "The Physician's Role," in Frank McArdle, ed., *The Changing Health Care Market* (Washington, D.C.: Employee Benefit Research Institute, 1987).

2. John Wennberg, "Population Illness Rates Do Not Explain Population Hospitalization Rates," *Medical Care*, vol. 25, no. 4 (April 1987).

health care services, the admission rate of surgical care is expected to vary from a low of 15 per one thousand beneficiaries to a high of 38 per thousand. In fact, observed admission rates range between 9 per thousand and 85 per thousand. In San Antonio--which has a particularly rich supply of military services because of two large medical centers--the expected rate of surgical admissions for active-duty dependents is 31 per thousand (27 in a military hospital and 4 under CHAMPUS), or the 75th percentile for all catchment areas. The actual rate was 42 per thousand, 35 percent higher than the expected value and above the 75th percentile for all catchment areas. In contrast, active-duty dependents living in the catchment area around Fort Benning, Georgia, were admitted to hospitals for surgery at a rate of only 21 per thousand, 27 percent below their expected rate.

TABLE B-1. ACTUAL AND EXPECTED RATES OF HOSPITAL ADMISSION FOR ACTIVE-DUTY DEPENDENTS BY CATCHMENT AREA (Fiscal year 1985)

Catchment Area	Actual a/			Expected b/		
	Total	Direct	CHAMPUS	Total	Direct	CHAMPUS
			Surgical			
All Catchment Areas c/						
Minimum	9	9	1	15	0	15
25th percentile	24	16	8	26	20	6
Median	28	21	7	29	21	9
75th percentile	32	27	5	31	23	7
Maximum	85	55	30	38	38	0
San Antonio	42	41	1	31	27	4
Seymour Johnson	32	13	20	30	22	8
Fort Benning	21	13	7	29	26	3
San Diego	19	16	4	22	15	7
			Medical			
All Catchment Areas						
Minimum	16	14	2	15	14	1
25th percentile	40	34	7	45	34	11
Median	49	33	16	50	40	10
75th percentile	61	60	1	52	43	9
Maximum	250	194	56	62	62	0
San Antonio	48	46	2	42	41	1
Seymour Johnson	62	41	20	50	40	10
Fort Benning	33	28	5	52	45	8
San Diego	26	19	7	33	21	12

(Continued)

TABLE B-1. Continued

(Continued)

SOURCE: Congressional Budget Office computations based on data provided by the Defense Medical Systems Support Center.

a. Number of times active-duty dependents in a particular catchment area were hospitalized in 1985 divided by the age-sex adjusted dependent population in 1986. (Detailed population data for 1985 are not reliable.)

b. Based on weighted least squares regressions:

Surgery:

$$\begin{array}{lllllll} & DR = 18.7(W) & + 2.7(OP) & - 0.01(CIV) & - 0.24(SURxOP) & - 4.2(NV) & \\ t & 12.1 & 4.5 & 2.3 & 3.7 & 2.7 & R^2 = 0.89 \end{array}$$

$$\begin{array}{llllll} & CR = 17.2(W) & - 0.4(\widehat{DR}) & - 3.3(AR) & - 3.9(NV) & \\ t & 7.0 & 4.1 & 4.0 & 3.6 & R^2 = 0.72 \end{array}$$

Medical:

$$\begin{array}{lllllll} & DR = 35.7(W) & + 4.0(OP) & - 0.02(CIV) & - 0.06(MDxOP) & - 9.8(NV) & \\ t & 14.1 & 4.2 & 2.1 & 5.0 & 3.7 & R^2 = 0.90 \end{array}$$

$$\begin{array}{lllll} & CR = 16.8(W) & - 0.13(\widehat{DR}) & - 1.29(OP) & \\ t & 6.4 & 1.8 & 4.2 & R^2 = 0.65 \end{array}$$

where DR = direction admissions per 1,000 dependents,
CR = CHAMPUS admissions per 1,000 dependents,
OP = number of MTF operating beds in catchment area,
CIV = number of available, acute-care civilian hospital beds (data from 1983 AHA survey),
SUR = Number of MTF surgeons,
MD = Number of MTF physicians outside specialties of surgery, obstetrics/gynecology, and psychiatry,
NV = 1 if a Navy catchment area, 0 otherwise,
AR = 1 if an Army catchment area, 0 otherwise,
W = square root of the age-sex adjusted dependent population (all variables are weighted by W).

c. Catchment areas are ranked by the total admission rate. For example, in half the catchment areas, the rate of hospital admissions for surgery exceeds 28 per thousand. In the particular CA that defines the median, 21 of the 28 hospital admissions are in an MTF, the other 7 under CHAMPUS.

APPENDIX C

THE STATISTICAL MODEL OF FAMILY USE

This appendix describes the statistical model that relates various characteristics of military families (demographics, geography, access to care, finances) to their category of outpatient use: military-reliant, military-preference, civilian-reliant, or civilian-preference. The model suggests that families will alter their patterns of care--thus raising or lowering overall demands on the military health care system--in response to changes in the availability or relative cost of direct care.

ESTIMATING THE MODEL

Most of the data for the model of family use come from the Military Health Care Survey. Survey sample data were stratified by sponsors' status (active-duty, retired, or deceased), household composition (single or family), and location (overseas, inside catchment area, outside catchment area), and four subsamples were selected for analysis: families of active-duty personnel that live inside catchment areas; families of active-duty personnel that live outside catchment areas; families of retired personnel living inside catchments; and families of retired personnel living outside catchments. Families that reported no use of outpatient care (fewer than one in twenty) were dropped from the sample.

In each subsample, the families were categorized by their outpatient patterns as either military-reliant, military-preference, civilian-preference, or civilian-reliant. When relatively few families fell into a particular category (such as active-duty families in the civilian-reliant category, or retired families living outside catchment areas in the military-reliant category), they were folded into the next closest category. Thus, each subsample produced three or four possible outpatient outcomes, or dependent variables.

To model the probability of a family choosing a particular category of outpatient use, the analysis used a polytomous logistic form:

$$p_i(j/X_{ij}) = \exp(\beta_j X_{ij}) / \sum_{i=1}^{J} \exp(\beta_k X_{ik})$$

where i indicates families (=1, . . . , N), j or k indicates outpatient categories (=1, . . . , J), X is a vector of explanatory variables (see Table C-1), and β is a vector of estimated coefficients, each of which shows how a change in an explanatory variable affects the probability of choosing outpatient category j rather than some other category.

The probability of observing a given sample is:

$$L = \prod_{i=1}^{n} \prod_{j=1}^{J} P_{ij}^{(V_{ij})}$$

($v_{ij} = 1$ if the ith family's outpatient category = the jth outcome).

A maximum likelihood procedure (taken from the SYSTAT statistical software package) estimates the coefficients that maximize the log of this likelihood function.[1] The final estimated equations appear in Tables C-2 through C-5.

DISCUSSION OF RESULTS

Table C-6 illustrates the effect of changing the value of selected variables while holding all other explanatory variables at their mean values. These simulations point up the effects on families' behavior of supplying more direct care or of altering the relative cost of care.

---

1. Leland Wilkinson, *SYSTAT: The System for Statistics* (Evanston, Ill.: SYSTAT, Inc., 1986).

TABLE C-1. EXPLANATORY VARIABLES IN THE POLYTOMOUS LOGIT MAXIMUM LIKELIHOOD EQUATIONS

Variable	Definition
AMB	Dummy variable = 1 if family lives outside a catchment area but within 20 miles of a military clinic.
AMBDIS	Distance to outpatient clinic if AMB = 1.
ARMY	= 1 if sponsor is member of Army, 0 otherwise.
BEDPOP	Military operating beds per thousand beneficiaries in the catchment area.
CHSUPP	= 1 if family has a CHAMPUS supplemental policy, 0 otherwise.
CIVOCC	Civilian hospital occupancy rate.
CVBEDPOP	Civilian acute-care beds per thousand beneficiaries in surrounding catchment area.
CVSLACK	Unoccupied civilian beds per thousand beneficiaries.
DISAB	= 1 if sponsor is disabled, 0 otherwise.
FNUM	Number of family members.
FPPER	Percent of family members judged in fair or poor health (rather than good, very good, or excellent).
INDIS	Distance in miles to military treatment facility (MTF).
JUNENL	= 1 if sponsor is enlisted with < 5 years' service, 0 otherwise.
KIDS	= 1 if at least one family member is < 7 years old, 0 otherwise.
LOWIN	= 1 if income less than $20,000, 0 otherwise.
MEDSUPP	= 1 if family has a Medicare supplemental, 0 otherwise.
MODIN	= 1 if income is $20,000 to $40,000, 0 otherwise.
MOVE	= 1 if family moved during 1983, 0 otherwise.
NAVY	= 1 if sponsor is member of Navy, 0 otherwise.
OFFICER	= 1 if sponsor is an officer, 0 otherwise.
OPRAT	Ratio of o/p to i/p workload in MTF.
PRIV	= 1 if family has private health insurance or belongs to an HMO, 0 otherwise.
SERVAR	= 1 if Army catchment area, 0 otherwise.
SERVNV	= 1 if Navy catchment, 0 otherwise.
SUPPMED	Support personnel per MTF physician.

SOURCE: Congressional Budget Office.

TABLE C-2. ACTIVE-DUTY FAMILIES LIVING INSIDE CATCHMENT AREAS

Sample Size and Independent Variable Means

Variable		Outpatient Category			
		Military-Reliant	Military-Preference	Civilian	All
	n	854	895	216	1965
	%	0.43	0.46	0.11	
INDIS		6.0	7.2	10.0	7.00
BEDPOP		2.7	2.3	2.1	2.5
SUPPMED		1.91	1.85	1.86	1.88
SERVAR		0.35	0.32	0.32	0.33
SERVNV		0.26	0.33	0.40	0.31
CVBEDPOP		72.6	74.7	88.8	75.4
CIVOCC		0.66	0.66	0.62	0.65
LOWIN		0.40	0.32	0.25	0.35
MODIN		0.42	0.45	0.40	0.43
PRIV		0.06	0.12	0.21	0.10
CHSUPP		0.01	0.01	0.02	0.01
FNUM		3.5	3.7	3.6	3.6
FPPER		0.03	0.04	0.05	0.04
KIDS		0.39	0.39	0.37	0.39
MOVE		0.17	0.11	0.09	0.13

Polytomous Logit Equation Where Reference Group Is Military Preference

Variable	Military-Reliant		Civilian	
	Estimate	t-stat	Estimate	t-stat
Constant	0.006	0.02	-0.925	-2.21
INDIS	-0.016	-2.42	0.026	2.84
BEDPOP	0.085	3.34	-0.028	-0.58
SUPPMED	0.066	1.14	0.101	1.22
SERVAR	0.059	0.50	0.129	0.63
SERVNV	-0.134	-1.04	0.369	1.84
CVBEDPOP	0.000	0.22	0.001	0.94
CIVOCC	-0.241	-1.03	-0.708	-2.16
LOWIN	0.355	2.50	-0.580	-2.70
MODIN	0.128	0.97	-0.477	-2.56
PRIV	-0.662	-3.68	0.545	2.65
CHSUPP	0.979	1.89	0.660	0.98
FNUM	-0.075	-1.79	-0.108	-1.61
FPPER	-0.404	-0.97	0.652	1.11
KIDS	-0.032	-0.31	0.117	0.71
MOVE	0.384	2.67	-0.266	-0.99

Convergence at Iteration 5

-2 times log likelihood ratio (chi squared): 157.6 with 30 degrees of freedom

Actual and Predicted Choice Probabilities for Each Category

Variable	Observed	Predicted
Military-Reliant	0.435	0.435
Military Preference	0.455	0.468
Civilian Preference or Civilian-Reliant	0.110	0.097

TABLE C-3. ACTIVE-DUTY FAMILIES LIVING OUTSIDE CATCHMENT AREAS

Sample Size and Independent Variable Means

Variable	Outpatient Category			
	Military-Reliant	Military-Preference	Civilian	All
n	71	157	182	410
%	0.17	0.38	0.44	
AMB	0.59	0.61	0.41	0.51
AMB*AMBDIS	1.30	1.66	1.17	1.38
PRIV	0.10	0.17	0.12	0.13
CHSUPP	0.01	0.03	0.05	0.03
LOWIN	0.48	0.39	0.34	0.38
MODIN	0.39	0.43	0.50	0.45
OFFICER	0.32	0.36	0.32	0.34
JUNENL	0.10	0.11	0.16	0.13
ARMY	0.27	0.33	0.38	0.34
NAVY	0.41	0.38	0.44	0.41
FNUM	3.7	3.6	3.8	3.7
FPPER	0.03	0.04	0.05	0.04
KIDS	0.39	0.36	0.44	0.40
MOVE	0.25	0.14	0.20	0.19

Polytomous Logit Equation Where Reference Group Is Military Preference

Variable	Military-Reliant		Civilian	
	Estimate	t-stat	Estimate	t-stat
Constant	-0.953	-1.25	-0.219	-0.37
AMB	-0.048	-0.15	-0.927	-3.60
AMB*AMBDIS	-0.024	-0.51	0.007	0.19
PRIV	-0.511	-1.07	-0.432	-1.25
CHSUPP	-0.496	-0.43	0.886	1.38
LOWIN	0.537	0.90	-0.712	-1.59
MODIN	0.243	0.50	-0.089	-0.25
OFFICER	0.008	0.02	-0.489	-1.55
JUNENL	-0.348	-0.68	0.557	1.46
ARMY	-0.321	-0.84	0.745	2.39
NAVY	-0.056	-0.16	0.882	2.88
FNUM	0.007	0.06	0.095	1.00
FPPER	-0.921	-0.73	0.496	0.62
KIDS	-0.031	-0.10	0.432	1.72
MOVE	0.713	1.94	0.418	1.33

Convergence at Iteration 5

-2 times log likelihood ratio (chi squared): 55.4 with 28 degrees of freedom

Actual and Predicted Choice Probabilities for Each Category

Variable	Observed	Predicted
Military-Reliant	0.173	0.167
Military Preference	0.383	0.391
Civilian Preference or Civilian-Reliant	0.444	0.442

TABLE C-4. RETIRED FAMILIES LIVING INSIDE CATCHMENT AREAS

Sample Size and Independent Variable Means

		Outpatient Category				
Variable		Military-Reliant	Military-Preference	Civilian-Preference	Civilian-Reliant	All
	n	177	391	286	76	930
	%	0.19	0.42	0.31	0.08	
INDIS		10.1	11.5	15.8	19.1	13.2
BEDPOP		3.5	2.6	2.0	1.7	2.5
SUPPMED		1.83	1.81	1.76	1.77	1.80
OPRAT		1.06	1.21	1.22	1.36	1.20
SERVAR		0.43	0.32	0.28	0.32	0.33
SERVNV		0.19	0.25	0.34	0.33	0.27
CVBEDPOP		84.2	87.2	111.2	158.4	99.8
CVSLACK		21.6	21.2	26.4	34.7	24.0
LOWIN		0.24	0.22	0.09	0.11	0.18
MODIN		0.54	0.53	0.51	0.42	0.52
PRIV		0.29	0.47	0.67	0.71	0.52
CHSUPP		0.06	0.13	0.11	0.09	0.11
FNUM		2.7	2.8	2.6	2.4	2.7
KIDS		0.01	0.03	0.03	0.03	0.02
FPPER		0.16	0.15	0.15	0.12	0.15
DISAB		0.34	0.30	0.29	0.22	0.30

Polytomous Logit Equation Where Reference Group Is Military Preference

	Military-Reliant		Civilian-Preference		Civilian-Reliant	
Variable	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat
Constant	-0.518	-0.83	0.679	1.22	-0.452	-0.49
INDIS	-0.014	-1.30	0.041	4.94	0.060	4.77
BEDPOP	0.072	1.49	-0.198	-3.25	-0.322	-2.43
SUPPMED	0.140	1.21	-0.053	-0.46	-0.120	-0.69
OPRAT	-0.218	-0.96	-0.182	-0.98	0.093	0.33
SERVAR	0.299	1.31	0.039	0.18	0.261	0.71
SERVNV	-0.136	-0.42	0.162	0.61	0.401	0.98
CVBEDPOP	-0.002	-0.91	-0.000	-0.06	-0.001	-0.32
CVSLACK	0.011	1.07	0.003	0.33	0.012	0.98
LOWIN	-0.083	-0.28	-1.394	-4.73	-1.543	-3.29
MODIN	0.045	0.19	-0.533	-2.83	-0.972	-3.30
PRIV	-0.803	-3.85	0.653	3.67	0.684	2.28
CHSUPP	-1.032	-2.76	-0.438	-1.66	-0.627	-1.37
FNUM	-0.036	-0.39	-0.314	-3.45	-0.523	-3.08
KIDS	-1.643	-1.54	0.511	0.96	0.890	1.00
FPPER	-0.103	-0.23	0.302	0.94	-0.098	-0.18
DISAB	0.114	0.56	0.156	0.84	-0.130	-0.41

Convergence at Iteration 6
-2 times log likelihood ratio (chi squared): 272.1 with 48 degrees of freedom

Actual and Predicted Choice Probabilities for Each Category

Outpatient Category	Observed	Predicted
Military-Reliant	0.190	0.166
Military Preference	0.420	0.471
Civilian Preference	0.308	0.304
Civilian-Reliant	0.082	0.058

TABLE C-5. RETIRED FAMILIES LIVING OUTSIDE CATCHMENT AREAS

Sample Size and Independent Variable Means

		Outpatient Category			
Variable		Military	Civilian-Preference	Civilian-Reliant	All
	n	174	435	253	862
	%	0.20	0.50	0.29	
AMB		0.34	0.19	0.11	0.20
AMB*AMBDIS		2.0	1.1	0.8	1.2
PRIV		0.38	0.56	0.66	0.55
CHSUPP		0.10	0.17	0.13	0.15
MEDSUPP		0.14	0.13	0.12	0.13
KIDS		0.02	0.05	0.02	0.03
FPPER		0.15	0.19	0.13	0.16
LOWIN		0.30	0.28	0.19	0.26
MODIN		0.52	0.46	0.52	0.49
DISAB		0.28	0.28	0.17	0.25
FNUM		2.67	2.58	2.63	2.61

Polytomous Logit Equation Where Reference Group Is Civilian Preference

	Military		Civilian-Preference	
Variable	Estimate	t-stat	Estimate	t-stat
Constant	-0.288	-0.72	0.552	1.73
AMB	1.666	4.49	0.798	2.33
AMB*AMBDIS	-0.026	-0.69	-0.029	-0.82
PRIV	-1.230	-5.35	-0.274	-1.49
CHSUPP	-0.779	-2.32	0.142	0.59
MEDSUPP	0.167	0.53	0.007	0.03
KIDS	0.120	0.16	1.256	2.22
FPPER	-0.015	-0.04	0.541	1.75
LOWIN	0.441	1.36	0.263	1.06
MODIN	0.298	1.11	-0.140	-0.72
DISAB	0.573	2.29	0.509	2.51
FNUM	-0.034	-0.35	-0.070	-0.86

Convergence at Iteration 5
-2 times log likelihood ratio (chi squared): 109.2 with 22 degrees of freedom

Actual and Predicted Choice Probabilities for Each Category

Variable	Observed	Predicted
Military-Reliant or -Preference	0.202	0.183
Civilian-Preference	0.505	0.531
Civilian-Reliant	0.294	0.286

TABLE C-6. EXPECTED PROBABILITIES OF MILITARY AND CIVILIAN RELIANCE UNDER SELECTED ASSUMPTIONS

	Active-Duty Families			Retired Families			
	Military-Reliant	Military-Preference	Civilian-Preference or -Reliant	Military-Reliant	Military-Preference	Civilian-Preference	Civilian-Reliant
			Inside Catchment Areas				
Overall	43	47	10	17	47	30	6
By Service							
Army	46	45	9	20	45	29	6
Air Force	45	47	8	16	49	30	5
Navy	40	48	12	13	46	33	7
By MTF Distance							
0.5 miles	47	45	8	23	54	21	3
7 miles	43	47	10	20	51	25	4
24 miles	35	49	16	12	39	40	9
By MTF Beds							
1	40	49	11	13	42	37	8
2.5	44	47	10	17	47	31	6
5	49	43	8	23	53	21	3
11	62	32	5	37	56	7	0
By Income							
Low	49	44	8	20	61	16	3
High	37	48	15	13	37	40	10
By Insurance							
None	45	46	9	28	46	22	4
Private	28	54	18	11	42	39	8
CHAMPUS Supplemental	66	25	9	14	64	20	3
By PCS Status							
No move	42	48	10				
Move	53	41	7				
			Inside Ambulatory Areas				
Overall	19	46	34	34		50	16
By Distance							
0.5 miles	20	46	34	34		51	14
5 miles	18	47	35	34		50	16
15 miles	15	47	38	33		47	20
By Income							
Low	25	49	25	33		54	13
High	13	43	44	28		54	18
By Insurance							
None	20	46	34	52		38	11
Private	15	57	28	28		52	20
CHAMPUS Supplemental	9	32	59	30		56	14
Children	7	42	50	17		75	7
			Outside Catchment Areas				
Overall	14	31	55	15		53	32
By Income							
Low	20	37	43	15		58	27
High	9	27	64	12		55	33
By Insurance							
None	15	30	55	27		48	25
Private	12	40	48	11		52	37
CHAMPUS Supplemental	5	17	77	13		59	27

SOURCE: Congressional Budget Office computations using maximum-likelihood logistic model of family outpatient patterns.

Supply of Direct Care

The model relates reliance on military outpatient services to two proxy measures for the overall availability of direct care. For families inside catchment areas, the measure is the per capita number of operating beds available in military hospitals.[2] For families outside catchment areas, it is proximity to a free-standing military clinic.

Inside catchment areas, the typical civilian-reliant family lives near a military hospital that supplies 1.7 operating beds per thousand nonactive beneficiaries; the norm for military-reliant retired families is 3.5 beds per thousand beneficiaries. When the model simulates an increase in the supply of care, the proportion of military-reliant families rises. Take the example of a catchment area that supplies 2.5 military operating beds per thousand beneficiaries: the likelihood that a local retired family, for example, will prefer military over civilian health care providers is about 64 percent. If that family were to move to a catchment area supplying twice as much direct care (5 beds per capita), its expected likelihood of military reliance or military preference would increase by one-fifth to 76 percent.

Military reliance tends to be least prevalent in catchment areas served by the Navy. If an active-duty family were to move from an Army catchment area to a Navy catchment, its expected likelihood of military reliance would decrease by six percentage points, from 46 percent to 40 percent. The disparity may be attributable to a relative scarcity of resources, particularly of personnel, in the Navy's treatment facilities.

Outside catchment areas, roughly one family in five is within 20 miles of a free-standing military clinic. Access to direct outpatient care significantly affects their outpatient patterns. Compared with families who live out of easy reach of direct care, families living near an outpatient clinic are less than half as likely to be civilian-reliant. So if a retired family, for example, moves from an area devoid of direct care to within 20 miles of a military clinic, its expected likelihood of military reliance or military preference would increase from 15 percent to 34 percent.

---

[2] Reliance on military outpatient care is doubtless also influenced by the availability of outpatient care. The absence of a measure of the supply of outpatient services probably biases up the estimate of the effects of hospital beds. But this is not a major problem here because the intent is to establish that greater availability of direct care boosts reliance on that care, not to distinguish between the effects of making more inpatient services or more outpatient services available.

Cost of Care

Changes in the relative cost of obtaining care will also affect the total use of direct medical services. When deciding where to get outpatient care, military families seem to weigh two types of costs: the "time" cost of military medical care, and the out-of-pocket money price of civilian medical care.[3] Thus, reforms that reduce the amount of time required to get military medical care may raise the demand for that care.

Inside catchment areas, distance to the military hospital is presumably related to time. So distance is a major factor distinguishing military-reliant families from civilian-reliant families.[4] The typical military-reliant family lives 6 to 10 miles away from a military hospital; the typical civilian-reliant family lives 10 to 19 miles away. The model predicts that at a distance of half a mile from a military hospital, two retired families out of eight will be military-reliant, four will be military-preference, and two will be civilian-preference. At a distance of 24 miles, only one will be military-reliant, three each will be military-preference and civilian-preference, and one will be civilian-reliant--in other words, the expected proportion of families who prefer civilian over military medical practitioners will double.[5]

The other side of the coin is the cost of civilian care. Private health insurance, especially when combined with CHAMPUS, greatly cuts the out-of-pocket money price of civilian medical care. For families of active-duty personnel that live inside catchment areas, having private health insurance reduces by about two-fifths the likelihood of military reliance; for retired families, having such insurance reduces the likelihood by roughly three-fifths.[6]

---

[3] Because visits to military clinics are free, time plays an especially important role in the demand for direct outpatient care. Jan Paul Acton, *Demand for Health Care When Time Prices Vary More than Money Prices*, R-1189- OEO/NYC (The New York City RAND Institute, May 1973).

[4] Periods spent waiting are of course another measure of time cost. Active-duty dependents who make appointments for civilian visits wait an average of 24 minutes to see their physicians; dependents who make appointments with military clinics wait an average of 34 minutes, a difference of 40 percent.

[5] Increasing the supply of direct care through the building of new clinics would also alter the effects of travel distance; scattering satellite clinics around a catchment area, for instance, would move outpatient care closer to more of the eligible users. (Jan Paul Acton, ibid., pp. 24-25.)

High family incomes help cushion any out-of-pocket expenses for civilian health care, and diminish the attraction of free direct care. Therefore, civilian preference and civilian reliance are greatest among more affluent Defense Department families. Consider the differences among families that live inside catchment areas. As household earnings increase from low (under $20,000 a year in 1983) to high (over $40,000 a year), the expected likelihood of civilian reliance or civilian preference among families headed by retired military personnel in-creases from 19 percent to 50 percent; among families of active-duty personnel, the expected probability rises from 8 percent to 15 percent. The greater a family's ability to pay for civilian care, the wider its latitude in choosing health care providers.[7]

---

6. Supplemental CHAMPUS policies also decrease military reliance. But rather than increase the probability of civilian preference, they only increase the probability of military preference at the expense of military reliance. Perhaps the families that buy supplemental policies are fundamentally happy with direct care, but also value the financial freedom to choose civilian care if necessary.

7. The choices of active-duty families are further influenced by their high rates of mobility, caused by frequent permanent changes of stations during a military career. When an active-duty family moves into a new catchment area, its probability of military reliance increases from 42 percent to 53 percent. It makes sense for recent arrivals to use the familiar military clinic, since developing new physician-patient relationships takes time and effort. Perhaps as families become more settled, they grow increasingly likely to branch out to the community for their health care needs.

APPENDIX D

THE CAPITATION BUDGETING DEMONSTRATION PROJECT

Several years ago the Defense Department put the concept of capitation to the test at the recommendation of the Military Health Care Study. The Capitation Budgeting Demonstration Project was started in fiscal year 1977, and culminated after several years in a comprehensive test in fiscal year 1980. Military medical commanders at 13 installations in two Defense Department medical regions were given fiscal responsibility for all care provided under CHAMPUS within their catchment areas. For each installation, the Defense Department projected the previous year's health care expenses--including appropriations for Operation and Maintenance (O&M), Military Personnel, Other Procurement, and CHAMPUS--to the budget year, adjusting for changes in population and inflation. The resulting "base case" estimate was then adjusted for projected changes in utilization or productivity.

Early on in the Capitation Demonstration, the Department superimposed a test of "regional budgeting" on one of the regions. The Department was concerned that without a regional structure it would not be possible to predistribute population among MTFs that are close together (in overlapping catchment areas). Accordingly, it established a Regional Capitation Budgeting Coordinating Committee to control the allocation of health care resources in the region, and designated the Army as the fiscal custodian.

The Capitation Budgeting Demonstration Project was judged, by and large, a failure. Though it did induce medical commanders to capture some CHAMPUS workload, the Demonstration otherwise offered no advantages over the traditional budgeting system. Regionalization was also a failure, largely because the Office of the Secretary of Defense failed to heed the regional decisionmaking body.1/

---

1. Office of the Assistant Secretary of Defense (Health Affairs), *Capitation Budgeting Evaluation*, in *Defense Department Appropriations for 1982: Hearings Before the Subcommittee on the Department of Defense of the House Committee on Appropriations, Part 4*, 97:1 (1981), pp. 886-941.

The Demonstration did not, however, actually put capitation to the test. Though accurate counts of population are absolutely indispensable to a prepaid group practice, the Demonstration's managers lacked this basic information. Before 1982, and the start of the Defense Enrollment Eligibility Reporting System (DEERS), there was no central, standardized source of data on the number or demographics of eligible beneficiaries. Thus, from the start the Capitation Budgeting Demonstration Project was destined to be a misnomer.

Good data alone would not have remedied the Demonstration, because it based "base case" budgets exclusively on past workload. Such experience is not necessarily a reliable guide to future workload because the demand for military health care is elastic; as discussed in Chapter III, nonactive-duty beneficiaries will increase their reliance on the military if the availability of direct care increases. Under the Capitation Demonstration budget, which presupposed a certain level of use, any installation that enhanced its health care capability thus risked becoming a victim of its own success. Having a clearly defined beneficiary population through closed enrollment would have eased this dilemma.

CONGRESSIONAL
BUDGET OFFICE
Second and D Streets, S.W.
Washington, D.C. 20515

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

FIRST-CLASS MAIL
POSTAGE & FEES PAID
C.B.O.
PERMIT No. G-70